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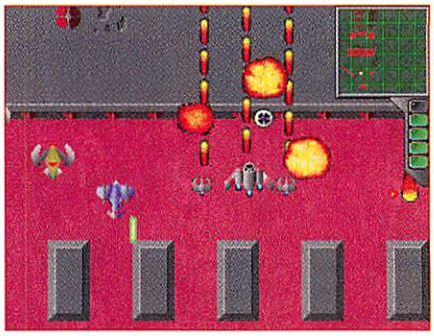
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Next month in **Acorn User**

We continue our series on creating Web sites; we do interesting things with fonts and present more on the NetStation

Next issue on sale 2 October 1997

Acorn nets the world's biggest company



Nippon Telephone and Telegraph (NTT) are Acorn's latest blue-chip customer. What makes this customer rather special is that they are the world's largest company.

NTT is the equivalent of BT in the UK, Deutsche Telekom in Germany and AT&T in the US, but on a rather larger scale. NTT's Information and Communication System Laboratories have announced the successful completion of a contract with Acorn to develop a new prototype videophone. Acorn's second-generation set-top box was the basic building block around which the videophone was developed.

Acorn are stressing that the completion of the contract is not the end of their relationship with NTT. The two companies are embarking on a long-term alliance and are now in the detailed definition phase for the next project.

NTT has licensed technologies built into Acorn's STB22 set-top box technology. One of the main features of the STB22 is its support of MPEG2 digital video and audio encoding and decoding. The prototype unit produced by Acorn for NTT is designed to showcase the next generation of telephony. NTT says the device will be the first of many exciting prototypes in this area which will require low-cost technology like that which Acorn is ideally placed to develop and provide.

Acorn's STB22 looks outwardly like an Acorn NC in its low profile, small footprint case. However, the STB22 has the necessary networking interface options, like ATM (asynchronous transfer mode) running at 25Mbits/sec, for broadband communications.

The STB22 can also be fitted with an Ethernet interface. NC or Internet Appliance-like features include a built-in Web browser featuring HTML, Java and Shockwave multimedia support. The CPU used is the ARM7500FE, the same chip, which incorporates a floating point unit (FPU) as used in the new Acorn A7000+.

NTT was attracted to the STB22 design because it is inexpensive to build, has an up-to-date specification and low power consumption. The STB22 is not a dumb terminal and so it can optimise a network connection's performance by operating a local cache to eliminate repeated data from the network traffic where possible. Both PAL (European TV standard) and NTSC (US and Japanese TV standard) are supported STB22 options.

Undoubtedly, the NTT deal will increase Acorn's reputation on the global scene for inexpensive, yet powerful, multimedia-enabled Internet appliances. Mark Phillips, Acorn's Technical Marketing Manager commented: 'As the world's biggest company, NTT is pushing back the boundaries in the development of telephony and we are proud to assist them in their requests. This is a very exciting project for Acorn and it proves how our technology lends itself to the customisation and the design specifications that our customers need to turn their ideas into reality.'

So where do you go after netting the biggest company in the world? Some interesting opportunities may lie with another old partner and formal rival of Acorn's – Apple (see other story).

Acorn and NetChannel team up

Acorn and NetChannel Inc., the Internet TV service provider company, have signed a mutual memorandum of understanding to become each other's preferred suppliers of technology and services. This means that Acorn will recommend NetChannel as their preferred content provider and, in return, NetChannel will refer customers to Acorn as their hardware and software provider of choice.

NetChannel, of which Dr. Herman Hauser – an original founder of Acorn – is a senior director, provides Internet services to customers who don't want to use a personal computer. NetChannel and consumer electronics partners Thomson Consumer Electronics/RCA in North America will be launching their service in September. In a nut-shell, NetChannel will start selling NCs which will enable anyone with a phone line and a TV to surf the Internet. The NetChannel service is already being provided by associate company NetProducts in the UK, which is selling Acorn-designed NCs to new subscribers for just £300.

Acorn's NC and related Internet appliance designs are proving to be popular with partners like NetChannel, NetProducts and others because of Acorn features like TVCentric technologies which use anti-aliased fonts, anti-twitter code and flashDisplay. NetChannel's speciality is in developing TV-centred GUIs and customer-oriented services. NetChannel uses the Internet to personalise television so viewers can have fun, stay informed, learn, communicate and shop using a television.

NetChannel organises the vast resources of the Internet by creating channels of programming personalised for each member of the household based on their individual preferences. Viewers also have access to full Internet functionality, including a Web browser, e-mail, bookmarks, newsgroups, bulletin boards, chat, secure electronic commerce, and search.

It's not difficult to see how the two companies complement each other. By combining their strengths, Acorn and NetChannel believe they will be able to obtain significant sales, marketing and technology advantages.

Philip J. Monego, Senior, President and CEO (chief executive officer) of NetChannel, Inc explained: 'Acorn has a unique knowledge of computer system design which they approach from a consumer view. Acorn's TV Centric technology, coupled with its ability to provide solutions, gives it an unrivalled strength in these new markets.'

Acorn's CEO David Lee, added: 'NetChannel's approach of providing solutions via the TV adds immense benefit to our position of providing TVCentric technology, which give rock-steady images, clear text and stunning graphics on TV screens.'

NetProducts has said it plans to reach a target of 200,000 unit sales in the next couple of years and the scale for NetChannel in the US will be larger still. Acorn's other Internet TV client, Curtis Mathes (see last month) overlaps the low cost offering of NetChannel, but is likely to concentrate on its up-market luxury Internet-enabled UniView TV sets.

The real challenge may come from Microsoft (see other story), which was recently given the go-ahead to take over WebTV Networks Inc. and so pave the way for Windows to enter the Internet TV scene.

Microsoft gets WebTV go-ahead

In the absence of any monopolies and merger objections from the US authorities, Microsoft have announced the completion of their acquisition of WebTV Networks Inc. for approximately $425 million in cash and stock.

WebTV Networks, which develops products for Internet surfing via an ordinary TV set, will operate as a subsidiary of Microsoft and retain offices and staff in Palo Alto, California. The size and nature of the proposed acquisition, announced on 6 April, meant the deal had to be investigated by US regulatory authorities. There were also industry objections to the deal citing a long-term aim of Microsoft's to dominate broadcasting as well as personal computing. Acorn partner, NetChannel Inc., was one of the objectors.

In the short-term one can only see negative ramifications for Acorn in the light of the Microsoft/WebTV go-ahead. However, could there be a long-term opportunity for Acorn? It's unlikely that Microsoft would port the bulky Windows 95/98 or NT operating system family to a WebTV Internet appliance. Instead there have been predictions that Microsoft will concentrate on developing the Windows CE (Consumer Electronics) platform to the WebTV platform. Microsoft announced at the end of last year a move to port Windows CE to the ARM processor platform and Acorn could well be in a position to be contracted by Microsoft to develop an ARM-based WebTV product.

This is all speculation, of course, but it makes sense. With Microsoft seeking to build new bridges across the computer industry, witness the amazing show of unity with Apple at the recent MacExpo show and you can confidently state that anything is possible these days!

Acorn to help Apple into NCs

A report from a MacWorld show in *Acorn User*? Surely not? But yes – the link between what happened at that historic event at the beginning of August and Acorn is there, sure enough. We spoke to the managing director of Xemplar – Acorn's joint venture with Apple UK, Brendan O'Sullivan, to explore the aftermath of Apple kissing and making up with Microsoft. O'Sullivan thinks there could be a big opportunity for Acorn in the light of this news, especially as Oracle's Larry Ellison is now a member of the Apple board of directors.

A defining moment in the history of the computer industry hit attendees of the recent MacWorld Expo in Boston. Steve Jobs, Apple's original co-founder, took to the stage and during an upbeat keynote speech promised that the company's bad times could and would be brought to an end. A new board of directors, including Oracle's founder and CEO Larry Ellison, was part of the revealed package of solutions.



However, the biggest surprise was the announcement that Apple were in the process of hammering out a cross-licensing deal with Microsoft to solve on-going operating system patent disputes between the two companies. Apple will also supply the Mac version of Microsoft's Internet Explorer Web browser with future releases of the Mac operating system and the two companies are also committed to co-developing their Java platforms. Microsoft would also investing $150 million in Apple via purchasing non-voting Apple shares at the full market price.

Booing and heckling greeted Jobs as he revealed the news and there was more bad feeling shown when Bill Gates appeared on a live satellite link to endorse the agreement. After all, this was akin to Acorn and RM declaring undying love for each other. After Gates' speech, Jobs announced that, as far as he was concerned, the competition between Apple and Microsoft was at an end and that Microsoft were going to be an important factor in getting Apple back on their feet. One wonders how Oracle's Larry Ellison, an outspoken critic of Microsoft and now newly-installed member of the Apple board, was persuaded to tag along with the policy of getting cosy with his arch-enemy.

Xemplar's Brendan O'Sullivan told *Acorn User* that he was very excited by the Ellison appointment. O'Sullivan comes from Apple and has now embraced the Acorn scene through the Acorn/Apple joint venture which is his business now. 'I think one of the more significant of the announcements was the appointment of Larry Ellison to the board,' said O'Sullivan, who added, 'When you say Larry Ellison, you also say 'NCs'.' O'Sullivan's point is that Ellison is a fan of Acorn since their tie up to develop the original ARM-based NC. Ellison has even been to visit Acorn in Cambridge personally. O'Sullivan proposed the question to us – could Acorn be a significant factor behind the scenes if Apple were to enter the NC market? Apple does have NC-like technology, particularly that based around the multimedia console called the Pippin. However, the Pippin is now elderly technology and none of its various incarnations has proved to be a commercial success.

O'Sullivan can see various reasons to be optimistic about the Apple news for both his Apple cause within Xemplar and his plans for the NC and, therefore, the prospects for Acorn. 'I think the announcements by Jobs are good for Apple, and I also believe they are good for Xemplar,' said O'Sullivan. He added, 'Jobs has said time and time again, a bit like Tony Blair, education, education, education! Jobs has been quoted as saying the NC has a particular role in education.'

Xemplar have been busy pioneering the introduction of Acorn-based NC products into UK schools. However, would Apple swallow their pride and badge-engineer a third-party NC or would they invest in their own product, like a face-lifted Pippin?

O'Sullivan told us with a measure of confidence, 'I believe Pippin will not re-appear. O'Sullivan agrees there would be no point in rolling out the Pippin yet again to mould it into an Oracle-compliant NC.' As O'Sullivan reminds us, 'Larry Ellison has already invented that wheel,' and of course one of the main wheelwrights was Acorn.

NCs are innovative and here

The old bugbear of 'well you can't buy one, can you?!' which dogged the NC can now be laid to rest. The Innovations Catalogue now includes the NetProducts NetStation incarnation of the Acorn NC, priced at just £300. You can order one on the Web too.

Meanwhile, Argonet are also offering Acorn NCs on their Internet service. So the next time someone tells you NCs are vapourware and, anyway, they still cost a lot of money (which is certainly the case with some products), point them in the direction of Argonet and the Innovations Catalogue.

Get well soon

Acorn User would like to extend its well wishes to Ray Pinchard, who works with Chris Cox in Acorn's Products Business Group. Ray, who deals with international business and value added resellers, was recently badly injured in a motorbike accident. The good news is that he is out of hospital and recovering at home. We sincerely hope his recovery goes well and he will be back at his desk soon.

A blinking good idea

A rather novel little product we stumbled across this month is the latest version of FileAccessLED, by Roger Lynn. This is a bit of module code, which is now StrongARM compatible for the first time, that can toggle the scroll lock LED on your keyboard during file accesses.

It's ideal for those who have upgraded drives which don't have physical drive activity LEDs. The latest StrongARM compatible version can be downloaded from http://www.man.ac.uk/~mbge4ril/

It works by intercepting all FileSwitch SWIs. Lynn says the previous version of FileAccessLED has been used by many people for some time now without any apparent problems. He adds that the problem with StrongARM compatibility appears to have been that the SA was simply too fast for the keyboard controller to keep up!

Are Microsoft out to destroy the Java dream?

Acorn have demonstrated their commitment to Java by developing RISCafé, a Java Virtual Machine or Java VM. A Java VM is an optimised environment for executing Java programs. Acorn's RISCafé Java VM runs on top of RISC OS (or the NC version of RISC OS called NCOS). The Acorn Java VM provides support for Java programs which run inside Acorn's browser environment as well as applications which are able to run outside the Web browser.

Acorn's RISCafé is based on the Java 1.0.2 Java Development Kit (JDK) as defined by Sun, which owns and licenses Java to third parties. Acorn are expected to announce that they have officially taken out a Java licence from Sun. Meanwhile, Acorn have already begun work on their Java 1.1 JDK implementation, which should also see the introduction of a Just-In-Time compiler (JIT) to accelerate Java application performance.

Java is making many in the computer industry very excited as it should mean that a properly written Java application will run with little or no modification no matter what hardware the customer has – as long as they have the Java application. Hardware independence is like a holy grail in some corners of the software world and Java has looked like delivering that dream. Unfortunately, there are now real fears that the dream will be shattered by, of all spectres, Microsoft.

Microsoft originally down-played the importance of Java because they perceived it as a rival to Microsoft's own ActiveX technology, which was specific to Windows. When Java wouldn't lie down and die, Microsoft tried a second strategy, which has been very successful at neutralising rivals in the past; to embrace and 'improve' the standard. Of course by doing that, it weakens the 'official' standard, which in the case of Java is owned and maintained by Sun. Microsoft's recent refusal to ship Java class libraries, making it difficult for Microsoft developers to integrate 'clean' Java into their own applications, has raised loud objections.

One publication editorial declared: *Microsoft officials sternly reminded their developers that they don't really want to write to the Java APIs, "so we'll make it as difficult as possible for you".* It is almost as if Microsoft are saying that Java is an OK programming language but forget the portability aspect.

This leaves Java developers divided and uncertain; should they sacrifice their Java principles and play the Microsoft game and if they don't, will their market be stolen by developers whose principles are less strong?

Microsoft can also point to the fact that Java cannot be considered a truly open standard as it is still owned and developed by Sun. However Sun realises that if Java is handed over to an independent standards body, its development – which is currently rapid because it is a relatively young product – could be stifled.

How does this affect Acorn? Java is good for Acorn because it will widen the appeal of their 'non-standard' hardware platform, especially in the networked multimedia markets which Acorn are banking their future on. Should Microsoft succeed in crippling the platform independence of the Java standard, Acorn would probably be disadvantaged. On an optimistic note, the enthusiasm for Java in its purest sense is still at a high and there is a good chance Microsoft's spoiling tactics will fail. However, it's a testing time for Sun and Java.

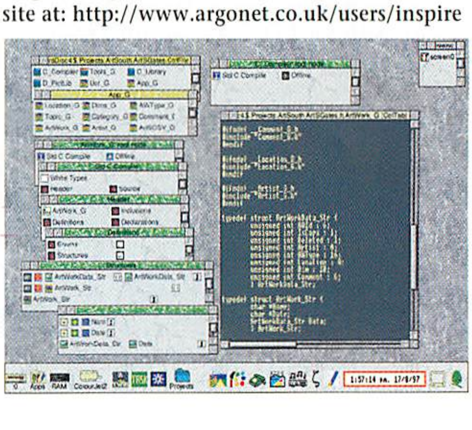
Inspired Dialogue

Dialogue II, which is described as a sophisticated data structuring tool featuring a friendly and intuitive interface, has been announced by Ian David Robinson of Inspire Software. Robinson says the suite is particularly useful for advanced, freeform and inter-connected origination of data. Users will find familiarity in its Acorn Filer-like interface. It enables the creation of a web of data which can be edited and manipulated by users with no programming knowledge.

According to Robinson, a Dialogue C Compiler is provided to allow data to be structured formally, header files to be produced, and linkable objects to be created. Such objects can then be included in any C application that wishes access to the header declared structures and the data contained.

Since the compiler allows for the use of pointers, data can be created far beyond the capabilities of C initialisers and binary data files. A programmer can design structures and they or a non-programmer can easily enter data conforming to the design. Robinson adds that Dialogue II's abstract architecture means it need not be limited to C and other language compilers are being considered.

For further information, contact Inspire at inspire@argonet.co.uk or check out their Web site at: http://www.argonet.co.uk/users/inspire



HardCash update

RaspSoft have released version 1.37 of their *HardCash* payroll system. The new version now supports full Tax and N.I. calculations, including Directors N.I. Weekly, Fortnightly, 4 weekly, Monthly periods. It also Calculates P.A.Y.E., DIRECTORS, SC60, 715. Vehicle Taxes, Fuel allowances and Global Tax Code updates are also included. It exports user defined CSV files and exporting to Apricote Studios' Prophet 3 is supported. HardCash also keeps track of SC60 payments. Calculations can be done manually or automatically if standard payments exist. You can also get a cash breakdown on each payslip and an overall cash required slip.

Much more information on HardCash 1.37 is available from the RaspSoft Web site at: http://www.argonet.co.uk/users/s.dine/ You can also e-mail: raspsoft@argonet.co.uk or tel: 01274 671922.

PublishArt Release 3

Following the review of *PublishArt 3* from SmartDTP in the July 1997 issue we would like to point out that upgrading from PublishArt Release 2 to PublishArt Release 3 costs £19.95 (fully incl) for which you can choose any version.

All versions of Release 3 are shipped with a 34 page user guide which gives information on how to get started, hints and tips, information on all the different groups as well as ideas on how to best use the designs in your DTP work.

As well as this a free unlimited site licence is included.

SmartDTP Tel: 01332 842803

Come fly with me

Peter Bondar's secret is out. The real reason Acorn took on the Raytheon contract to help develop a GPS (global positioning satellite) device for the aviation industry is that Bondar, Acorn's ebullient Senior Vice President of Technologies and Engineering, secretly harboured ambitions to take up flying. Bondar, who is reported to have become bored with driving his Audi A4 4x4, is now well on his way to gaining his private pilot's licence and has invested in a single-engine aircraft, to boot.

Internet for free, almost

A London-based Internet service provider, FreeDotNet, have introduced a new 'Standard' service package which costs just £30 for two years of general unlimited Web browsing and FTP (file transfer) access. The catch is that you don't get e-mail included in the package.

However, FreeDotNet point out that an increasing number of customers don't require an e-mail service as part of their Internet package, among them expected to be many consumer surfers using NCs. E-mail is available as an optional extra for 99 pence per week. The typical cost of a basic Internet account among FreeDotNet's competitors in the UK is around a tenner per month, including e-mail and usually some bundled Web space.

Over two years, including e-mail, FreeDotNet works out at about £133, or £5.54 a month, which amounts to a solid saving and it looks like a great bargain if you don't need e-mail. Other packages are available which increase the number of supported features provided to you, like newsgroups and Web space, for example. A word of warning to Acorn users – unlike Acorn-dedicated service providers, such as Argonet, FreeDotNet won't be able to provide support or software for Acorn users. You pay for what you get. However, if you're confident with your TCP/IP stacks, IP addresses and POP3 configurations, you could definitely save some cash.

FreeDotNet: e-mail: adsmith.sales@thefree.net WWW: http://www.thefree.net tel: 0181-568 3377, fax: 0181-568 3474.

New SCSI II card to take market by storm

Castle Technology are the latest Acorn developer to bring out a 32-bit SCSI II card. Castle Technology founder and hardware designer, John Ballance, told *Acorn User* that the new Storm DMA32 SCSI II card continued the Castle SCSI tradition of robustness and reliability and added a healthy performance boost, particularly for Risc PC users, which remains the only Acorn computer model line to support DMA (direct memory access) on the podule bus.

Ballance told us that the new card had been benchmarked at transfer rates of up to 4.5 megabytes per second, the fastest yet, according to the benchmark author and making it 2-2.5 times faster than the original 16-bit version, which will continue on sale beside the entry-level 8-bit design.

Castle Technology are now referring to its family of SCSI II cards as the 'Storm' range.

The Storm DMA32 SCSI II card is priced £128 + VAT, the Storm 16 bit SCSI II card £96 + VAT and the Storm 8 bit SCSI II card comes in at £88 + VAT. However, there are special offers available – if you purchase any other SCSI device from Castle Technology at the same time, the SCSI card gets a 25 percent discount. Castle are also offering a trade-in deal for rival brands of Acorn-compatible SCSI card. Trade in your old working card for a new DMA32 Storm card and you get the new card for only £80 + VAT. This offer will close at Christmas.

Ballance says that traded-in cards will not be sold on. Part of the thinking behind the scheme was to eliminate old, unreliable and non-standard SCSI cards which generated large numbers of technical support calls.

Meanwhile, Castle Technology have just introduced a parallel port Mustek flat-bed scanner. Ironically, the new scanner enables users without a SCSI card to enjoy the benefits of the full colour Mustek scanner. The 300dpi 24-bit scanner is priced £199 + VAT.

Castle Technology can be contacted on tel: 01728 621631, fax: 01728 621179, or you can check their Web sites at: http://www.castle-technology.co.uk or http://www.castlet.demon.co.uk John Ballance can be contacted via e-mail at: jwb@castle-technology.co.uk

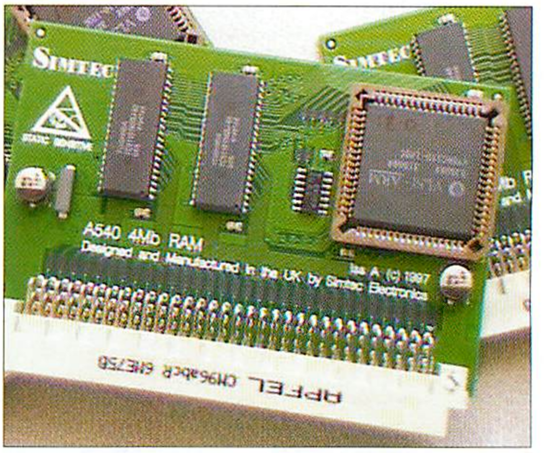
Full house at Simtec

Simtec have announced that they've started shipping 4Mb RAM cards for the A540 and R260 computers.

This was the only gap in their range of memory upgrades designed for Acorn's ARM based machines – the decision to make it was due to increasing customer demand, after Acorn discontinued supply of their upgrades last year.

The new card was designed and manufactured in-house using a blend of the latest surface-mount and hybrid technologies and is fitted with a precision graded MEMC to comply with the original specification.

The plug-in upgrade costs £99 + VAT and carries Simtec's normal two year guarantee. Simtec can be contacted on 01772 812863.



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CD Drive Twenty Four Speed IDE	£116.33
CD Drive Twelve Speed SCSI	£170.38
CD Drive Writable PD Drive	£398.33
StrongARM Upgrade (for old style RPC's)	£292.58
SCSI I Interface	£116.33
SCSI II Interface	£175.00
PC DX4-100 Card with Risc PC	£233.83 (£351.33 without)
PC 5x86 Card with Risc PC	£351.33 (£468.83 without)
2 Slot Backplane (for 4Mb Risc PC)	£35.19
2nd Slice (inc. 4 slot Backplane)	£90.00
!PC Pro Upgrade (incl PC Exchange)	£49.00

If upgrading the original 1.2Gb hard drive, deduct £100 from the following prices;

2GB Drive IDE	£235.00
2GB Drive SCSI	£434.75
4GB Drive SCSI	£787.25
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Windows Workgroups 3.11 OEM (CD)	£64.63

StrongARM 200MHz Risc PC



This is the most flexible machine in Acorn's range and has a wide range of cost effective upgrades. Please phone for our full listing. All hardware upgrades are fitted free of charge. Have your Risc PC system tailor-made to meet your requirements. All systems are supplied with 1 year warranty, including 1 year free technical support.
Trade-in discount available.

Risc PC 4Mb HD1.2Gb/AKF60 . . . . £1397.70
Risc PC 4Mb HD1.2Gb x8CD/AKF60 . . . . £1482.96
Risc PC 10Mb HD1.2Gb/AKF60 . . . .£1697.70
Risc PC 10Mb HD1.2Gb x8CD/AKF60 . . . . £1782.95

NEW Acorn A7000+

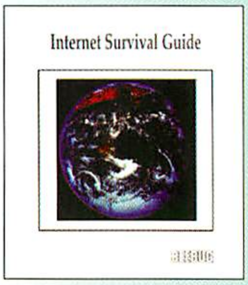


This is the first production Acorn computer with an integrated Floating Point Accelerator. The combination of a fast 7500FE processor and high-speed EDO DRAM give a dramatic improvement in desktop performance, but with no increase in price! The A7000+ offers: 8Mb EDO RAM, 1.2Gb IDE hard drive, RISC OS 3.71, Floating Point Accelerator, Integrated 16-bit digital stereo sound, 1.6Mb floppy drive, VGA, SVGA, and other resolutions

A7000+ 8Mb HD1.2Gb £1099.00
A7000+ 8Mb HD1.2Gb 8xCD £1199.00

Internet Service

We have initiated a complete set up service. Send or bring your computer to us and we will return it all set up ready to access the Internet, send emails, and surf the Web.
What you'll get:



- An account with Demon Internet
- USR 33,600 external modem
- Internet accessing software
- Email accounts for up to 9 users
- Up to 5Mb of Home Page space available
- Your own Home Page created
- One years unlimited access to the Internet, Email, WWW
- Your computer completely configured ready for use
- Internet Survival Guide
- Free 'get you started' help line for 10 days

Subject to demand we will return your computer to you within 3 working days (from our receipt of your computer), at £15 for 24 hour insured courier delivery.

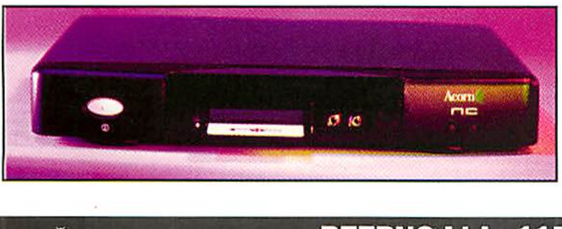
All we need from you are some basic details and Home Page text and layout. Please telephone us for further details and an Internet Service Order Form.

We can configure any Acorn computer that meets the following specification: 4Mb RAM, Hard Disc with 10Mb free, RISC OS 3.1 or later, working serial port.

Code INTAg Internet Service £525.00 inc VAT

PC Internet Service also available

Acorn Network Computers ONLY £468



BEEBUG Ltd., 117 Hatfield Road, St Albans, Herts AL1 4JS
Tel: 01727 840303 Fax: 01727 860263 Email: sales@beebug.co.uk
Chargeable Support Hotline 0897 596 000
All prices inc VAT Courier delivery £11.75

Acorn Centres of Technology

New products / upgrades

Product	New features/product details	Price	Contact
SwitchManager	* Program to simplify switch access to software for users with severe mobility problems *Supports multiple users *Switch settings can be shared between progs that use SwitchManager		Learning Through Computing Tel: 0131-662 1881
Doorway Classroom Pack (Switch Access Version)	*Maths & literacy progs for KS1 & 2 which include switch access for users with severe mobility problems * Progs can also be used with a mouse, trackerball or touchscreen	Start at £75 Contains 17 progs (15 include switch access)	Learning Through Computing Tel: 0131-662 1881
Zig Zag: Vikings	* Based on Zig Zag BBC Schools TV programmes for KS2 * Provides detailed 3D view of a typical environment of the period * Pupils guide their character into buidings and locations to tackle on-screen activities	£34	Logotron Tel: 01223 425558
Ravenskull	* Update of a classic game for Risc PC, A7000 series and Archimedes series * Arcade adventure game full of puzzles and problems to solve		ProAction Tel: 0958 789608 (9am-5pm weekdays, 9am-2pm weekends — please only call in these hours)

On the move

The Datafile

The Datafile have moved to PO Box 175, Weston-Super-Mare, BS23 4PU, tel/fax: 01934 644046.

Eesox

As from 1 September, contact Eesox at Century House, 1st Floor, Market Street, Swavesey, Cambridgeshire, CB4 5QG. Tel/fax: 01954 208208. E-mail: sales@eesox.demon.co.uk

Oregan

All e-mail addresses at Oregan Developments Ltd have now changed. Customers should use the following contacts: sales@oregan.com – sales and product info enquiries, support@oregan.com – support for registered users

The address of the Digital Audio Mailing List (see Music and Audio Page) has also changed. In order to subscribe send a blank mail to: oreganda@oregan.com – with the subject SUBSCRIBE.

The Oregan Developments Web site is now located at: http://www.oregan.com

Acorn at heart

Following the news item last month here is a more accurately coloured version of Acorn's new symbol and logo for Acorn@Heart.

Acorn developers congregate

St. Johns Hall, University of Cambridge, was the venue for the first Acorn developers conference in a long time, recently. No less than 140 developers, each paying £30, turned up to hear about the new Risc PC II from Chris Cox and his various colleagues working on the project.

ARM Ltd personnel also gave presentations. A Risc PC II prototype, which is likely to have a multi-processor feature, is promised for public perusal for the first time at the Acorn World in Wembley this November. Alas, Cox wasn't saying much to us about the conference as it was held under tight non-disclosure terms.

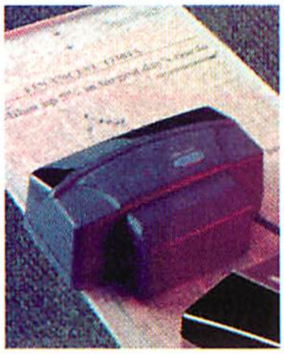
However he was able to reveal that some of the assembled developers had travelled from as far as Germany, Norway and the Netherlands. There was even one attendee who specialises in embedding Acorn hardware into radar systems.

'The fact that we held this conference, the first in a long time and that so many people turned up was very good,' said Cox.

Contacting me

You can contact the news page by writing to me Ian Burley at the usual Acorn User address or by e-mail: aunews@idg.co.uk

Don't buy a black & white Hand Scanner!



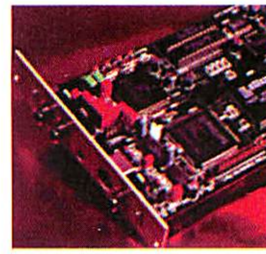
Presenting a very good reason not to buy a black & white hand scanner. **ColourMobile** is a motorised colour scanner that scans automatically, and works directly from bi-directional parallel ports, so you don't need a special expansion card. It also provides a pass-through port for printers and dongles etc.

- 24 bit scan head: 16.7 million colours & 256 greys.
- Resolutions from 100 to 400 dpi (interpolated).
- Scan width 104.6mm (4.12").
- Works with printers, dongles & CD-ROM drives.

"Intuitive and remarkably easy to use... scans are outstandingly sharp with excellent colour accuracy. What more can I say?" – Archimedes World.

Special price £125*

24i16 Multimedia Card
24 bit Video & 16 bit Sound



24i16 combines an advanced 24 bit video digitiser with a stereo 16 bit sound sampler. As well as beautiful stills, **24i16** captures Replay movies and hi-fi audio samples.

- S-VHS or composite inputs.
- 1Mb framestore captures still images at full PAL resolution, 768 pixels x 576 lines.
- Replay movies (including sound) can be recorded, image size and frame rate are fully adjustable and limited only by hard disc and system bandwidth.
- Sound sampler records at sample rates up to 48kHz.
- Hardware video scaling and anti-aliasing, plus real-time control of brightness, contrast & saturation.

Price £472.94*

New Upgrades

Risc TV
The Award Winning Desktop Television System is only £298.45!*

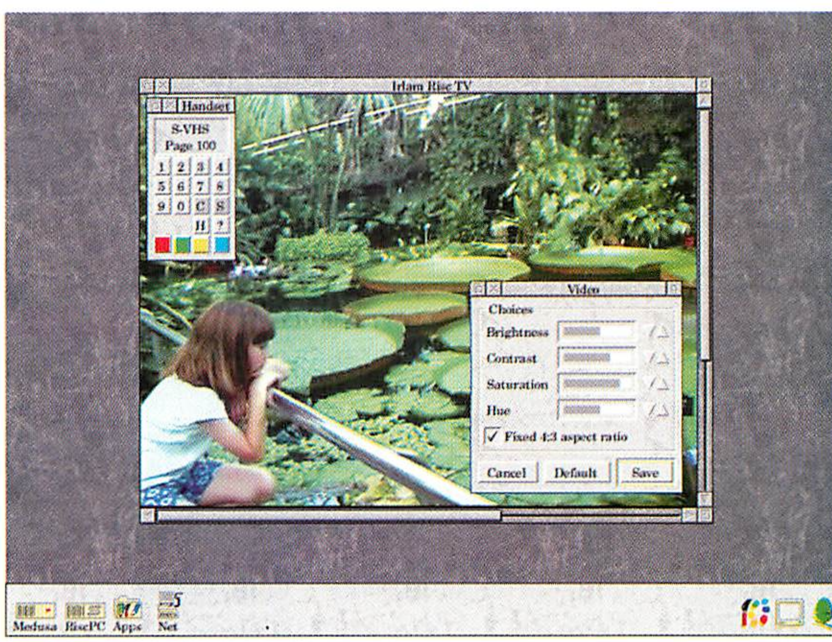
Risc TV allows you to watch full-size or scaled TV (from the on-board tuner or other video source) in real-time on the desktop in true colour. It does not suffer from the usual drawbacks of slow update and/ or small image size, because this unique digitiser uses dedicated hardware to handle screen refresh. This also means that the video display shows millions of colours in any mode and it even works on A5000's! Of course you can also use **Risc TV** to grab still images and future expansion is catered for by special feature connectors.

- On-screen sizes of over 1024 x 768.
- No DMA slot required.
- Real-time scaling, filtering and control of contrast, brightness and saturation.
- TV tuner fitted as standard.
- Auxiliary inputs for Composite & S-Video.
- Teletext option is available at low-cost and there are now two major new upgrades.

Keying Module allows **RiscTV's** video window to be obscured by other objects and still provide real-time overlay.

Audio Upgrade includes NICAM decoding, external audio input, 16 bit stereo sampling, audio mixing, volume and tone controls.

Updated software provides Replay movie capture and support for the new upgrades.



For the Complete Picture...

Irlam Instruments Ltd. Brunel Institute for Bioengineering, Brunel University, Uxbridge, Middlesex, UB8 3PH. Tel/Fax 01895 811401.
Email: sales@irlam.co.uk Website: www.irlam-instruments.co.uk

*All prices are for packages fully inclusive of hardware, delivery and VAT.

Please note: All products require RISC OS 3.1 or later, a hard disc & 4Mb RAMis recommended. Check suitability for your computer before ordering. All hardware products have full 1 years guarantee. E & OE.

MasterCard

VISA

Showroom open Mon-Sat 10-18.00 hrs **(All prices INCLUDE VAT)** Carriage not included

NetStation £Call

Access the Internet from the comfort of your living room

The NetStation allows you to access the internet simply and cheaply without having to learn complex computer jargon. Simply;

- connect to TV
- connect to phone
- plug in smartcard
- subscribe to ISP*



Browsing the World Wide Web will become as natural as using Teletext on the TV!

Corporate NetStations are also available fitted with ethernet cards for connection to a local network server. Visit our showroom for a demonstration. *ISP = Internet Service Provider eg. Demon.

Hard Discs

New

Carr.: a=£2, b=£6, c=£8

NEW!! Simtec IDE Interface £69

New High performance IDE/ATAPI interface for all RiscOS Computers from A3000 to RiscPC (specify when ordering). Supports up to 4 IDE/ATAPI devices including CD-ROM's.

3½" Hard Drives	IDE	SCSI
IBM 540Mb	-	£150b
Quantum 1Gb	£Callb	-
Quantum 2.1Gb	£150b	£260b
Quantum 4Gb	£215b	£Callb

Syquest Removable SCSI Drives

105Mb Int Drive	£90b	105Mb Cartridge	£29a
EZ230 Ext Drive	£242c	EZ230Mb Cartr.	£21a
EZ135Mb Cartr.	£20a	270Mb Cartridge	£40a

Hard Disc Interfaces/Accessories

IDE interface	£69b	50-50C SCSI Cble	£12a
Morley Uncached	£100b	25D-50C SCSI Cbl	£12a
Morley Cached	£165b	SCSI2-50C Cable	£18a
Cumana SCSI II	£175b	SCSI2-25D cable	£18a
		50IDC 4-way SCSI	£12a
External case/psu	£90c	50C Terminator	£12a
2nd IDE Drive Kit	£15a	50HPC Terminator	£15a

zip/jaz Drives

New

Now include our RiscOS JazZip tools (£10 if purchased separately)

- zip & jaz Drives work just like hard drives except they are removeable, giving instant access to files
- zip drives use 100Mb capacity discs & jaz drives use 1Gb discs allowing unlimited capacity.
- The drives are fast. Data transfer speeds up to 1Mb/s for zip drives & >5.5Mb/s for jaz drives - ideal to backup your hard drive.
- Each drive comes with 1 year warranty and a starter disc.
- These drives require a SCSI card that is suitable for removeable devices.

Internal zip drive (5¼")	**£120c**
External zip drive	**£120c**
Single 100Mb zip Cartridge	£14a
Pack of 6 zip Cartridges	£65b
Internal 1Gb jaz drive (3½")	**£245c**
External 1Gb jaz drive	**£320c**
Single 1Gb jaz cartridge	£76a

CD-ROM Drives

Multi-Session, PhotoCD, CD-DA, White & Green Book compatible. SCSI drives require SCSI card withCDFS>2.20

Carriage: a=£2, b=£6, c=£8

Internal CD-ROM Drives

Panasonic 8xCD **ATAPI**	£75c
ATAPI Cable & Fitting Kit	£5a

Above drives are compatible with RiscPC/A7000 only.

Sony 2x CD **SCSI** 275ms	£80c
Pioneer 12x CD **SCSI** 130ms	£200c

External CD-ROM Drives New

Panasonic 8xCD **ATAPI**	£180c
- suitable for Simtec IDE interface	
Sony 2x CD **SCSI** 275ms	£135c
Pioneer 12x CD **SCSI** 130ms	£280c

TopicART CD £15

This CD-ROM contains over 2000 ClipArt files, each in Draw, ArtWorks & CorelDraw3.0 EPS formats. The CD also includes high quality Replay Movies & other demos. Site Licence is included.



RiscOS Computer Systems

1yr warranty.**Carriage included on computers.** All machines are single slice & a backplane is fitted to 10M RiscPC only. You MUST be a Clan Member (non-members can join for £15 at time of purchase) to qualify for the following special offers.

Get 1 of the following free when you purchase a StrongARM RiscPC.

Option 1 - Family Pack (DK Human Body CD, Textease, ArtWorks.
Option 2 - Business Pack (EasiwriterPro, Eureka3, Datapower).
Option 3 - 17" AKF93 Monitor instead of 14" AKF60 Monitor.
Option 4 - Canon BJC-4200 Colour Bubblejet Printer.
Option 5 - QV10a Casio Digitial Camera with Acorn link and software

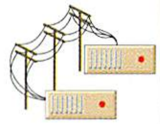
Computer Model with	14"(AKF60)	17"(AKF91)	No Monitor
NetStation (Modem OR 10baseT Ethernet)	£Call	£Call	£Call
NEW A7000+ with 48MHz ARM7500FE, 32MHz memory bus, EDO RAM.			
A7000+ 8MHD1.2Gb **NEW!**	£1055	£1475	£810
A7000+ 8MHD1.2Gb+8xCD **NEW!**	£1140	£1540	£870
RiscPC StrongARM 4MHD1.2Gb	£1365	£1725	£1100
RiscPC StrongARM 4MHD1.2Gb+8xCD	£1415	£1775	£1150
RiscPC StrongARM 10MHD1Gb	£1665	£2025	£1400
RiscPC StrongARM 10MHD1Gb+8xCD	£1715	£2075	£1450

Deduct £125 for iiyama MF-8617E or £105 for MT-9017E off 17" prices.

20/20 Finance on Acorn computers - ~20% deposit & 20 interest free monthly payments. Loans from £700(min) - £3000. Subject to status.

QuickLynk (v1.04) £24a

With Local Cable 5m - £36a, 10m - £38a, 20m - £44a



QuickLynk allows you to access another remote RiscOS computer using the serial port via modems or locally using a cable to connect the 2 computers. Each computer can be configured to allow access to any attached filing system device eg ADFS, IDE, SCSI, CDFS, etc. Once connected, files can be transferred to/from the remote computer. Other features include password access, auto dialler with phone book and chat mode to send messages to remote computer/user. Transfer rates up to 1.9 kbytes/s can be achieved with older computers, eg. A410, A3000, rising to 11.4 kbytes/s on the RiscPC range. The transfer rate is limited by the serial port speed. QuickLynk cannot at present be used directly from programs/command line.

QuickTile (v1.03) £25a



QuickTile allows you to create posters from ANY RiscOS application, including Impression. Simply enter the size of poster required & select PRINT from the application! QuickTile does the rest, printing each tile with crop marks and tile references. New features include the facility to print inverted crop marks or no crop marks. QuickTile can only be used with the RiscOS printer Driver or TurboDrivers. **Requires RISCOS 3.10 or later. Return disc to upgrade for £4. Upgrade from Tiler for £18.**

Mail Order - 0161-474 0778 **(All prices INCLUDE VAT)** The lowest prices without compromise

RiscPC PC Cards

A1 5x86-100 (512kb)	£380c
above price includes PC Pro	
Acorn 586-100 (256kb)	£350c
Acorn 486DX4-100	£230c
PC Pro (without PCExchange)	£38a
Window '95 CD (Full)	£75a

The above can be installed directly from CD without previously installing DOS or Windows.

RiscPC Upgrades

2nd Slice with PSU	£116c
2nd Slice without PSU	£90c
YES 16 bit Mozart Card	£70a

Memory

Following prices strictly whilst stocks last.

RiscPC/A7000 SIMMS

4Mb	£20a	8Mb	£28a
16Mb	£50a	32Mb	£100a

RiscPC VRAM

1Mb 2nd user	£40	2Mb	£95
1-2Mb u/g (exchange)			£75

Call for details of memory for other models.

Monitors (Carriage £10)

Older computers will require an adaptor £12

Ilyama MF-8617E 17" £500
High spec FST Tube with 0.26" dot pitch
Ilyama MT-9017E 17" £530
Very High spec Diamondtron tube, 0.25" stripe

Printers (Carriage £8)

Canon BJC-240	£145
Canon BJC-4200	£180
Canon BJC-4550 (A3)	£350
Canon BJC-5500 (A2)	£610
Canon BJC-620 (720dpi)	£240
Epson 400 (720dpi, 3ppm)	£190
Epson 600 (720dpi, 4ppm)	£275
Epson 800 (1440dpi, 7ppm)	£390
Epson 1520 (1440dpi, A2)	£700
HP LaserJets 6P	£550

Add £47 to above printers for TurboDriver

I[3] Networking (Carr. £6)

A30X0 EtherLan 102	£140
Archi EtherLan 514	£140
RPC/A7k EtherLan 602	£120

Add £17 to above prices for Access+.

Portable Computers

Carriage: a=£2, b=£6, c=£8

Pocket Book II (1Mb) £305b

NEW Psion Series 5 - includes PsiWin Link

4Mb RAM	£430
8Mb RAM	£480

Psion 3c(backlit) 2Mb-£325b

AutoRoute Express UK/Eire £60a - one of the best packages for the PB/3a

A-Link	£59a	Mac Serial Link	£50a
Parallel Link	£34a	PsiWin PC Link	£80b
128k RAM SSD	£48a	512k RAM SSD	£135a
256k Flash SSD	£53a	512k Flash SSD	£89a
Mains Adaptor	£18a	PBII/Ps3a Games	£38a

Hardware Upgrades

24i16 Card (1Mb)	£450b
Dual Serial Card	£104b
FPA for 25MHz ARM3	£67a
Joystick I/F (Not RiscPC)	£30a
Logitech Mouse (Acorn)	£26a
Midi Max Card (CC)	£79b
Movie Magic (1 only)	£210b
RiscTV Card (Irlam)	£265b
RiscTV Teletext option	£45a
Scart Cable (9 or 15 pin)	£12a
Serial Upgrade (A3000)	£27a
2 x 25W Speakers	£30b
2 x 80W Speakers	£35c
Videodesk (Irlam)	£1165b

Hard Cards/Multi-Pods

See top for other hard discs. Carriage £8

A3000/A3010 Hard Cards

340Mb	£175b
420Mb	£195b

Scanners (Carriage £8)

ScanLight Video 256 £215

Epson Colour Scanners

Include !TWAIN & ImageMaster for RiscOS. Bundles include CorelPaint & OCR software for PC's/PC Cards.

GTx-5000 Para bundle	£275
GTx-5000 SCSI bundle	£360
GTx-8500 Para bundle	£525
GTx-8500 SCSI bundle	£550
GTx-9500 Para bundle	£630
GTx-9500 SCSI bundle	£660

Modems (Carriage £8)

33.6 FLASH Sportster £175
Flash upgradeable to 56kbs

Modems come with a 9-25 PC wired cable. A3000/Archi require an Archi wired cable.

ANT Internet Suite II	£110a
ArcFax	£31a
Dual Serial Card	£104b

9-25 Archi or PC Wired Modem Cable £12ea.a
3-way Serial T-Switch (incl. comm. cable) £32b

Printer Consumables

Carriage: £2 for Cartridges, £8 for Toner

BJ-10 (BC-01)	£18	BJ-200 (BC-02)	£19
BJ-210 (BC-05)	£28	BJ-240 (BC-06)	£Call
BJC-600 Series		BJ-300 (BJI-642)	£16
BJI-201HCbk Black	£10	**BJC-4000 Series**	
BJI-201bk Black	£6	BCI-21Bk Black	£9
BJI-201C/M/Y	£8 ea.	BCI-21C Colour	£17
BJC-800		BC-20 Fast Black	£28
BJI-643 Black	£18	BC-22 Photo Cart	£34
BJI-643C/M/Y	£23 ea.	BC-22 Photo Kit	£39
HP DeskJets-500 ser.		**HP DeskJets 600 ser.**	
Mono	£23	Mono	£25
Colour	£25	Colour	£27

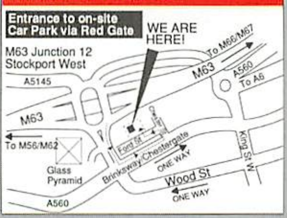
Epson Stylus Colour	Black £16/Colour £26
Epson Stylus Colour II	Black £20/Colour £26
C3903A Toner (LJ5P)	£64
EP-L Toner (LBP-4/HP LJIII)	£64
HP 92274A Toner (HP LJ4L)	£60
Swift24 Mono/Colour Ribbon	£8/£16

Terms & Carriage

Carriage: To benefit personal callers to our showroom carriage is itemised seperately. The carriage indicated is for single items. Please call us for total carriage when ordering more than one item since it is not cumulative.

Terms: All prices include VAT except books. Carriage is not included unless otherwise stated. Carriage charges apply to mainland UK (excluding remote areas, Scottish Highlands, Chann Isles, IOM), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Educ Inst official orders accepted. E&OE.

Where to Find Us



Books (No VAT)

Carriage: a=£2, b=£6, c=£8,

Acorn RISCOS3 PRM's	£99.95c
Acorn Volume 5a PRM	£29.75b
Acorn BBC Basic VI Guide	£19.95b
Acorn RiscPC Tech Ref Manual	£49.95c
ArtWorks Made Easy (Dabs)	£5.00a
Budget DTP (Dabs)	£5.00a
'C' A Dabhand Guide (Dabs)	£5.00b
RiscOS 3 First Steps (Dabs)	£5.00a
Wimp Programming for All (Beebug)	£10.95a

CD-ROM's (Carriage £2)

CD software for RiscOS

ArtWorks on CD (CC) (Carriage £6)	£88
Childrens Micropedia (Kingfisher)	£64
ClipArt CD 1/2 (CC)	£21 each
Dinosaurs (Microsoft)	£44
Dune II (Eclipse)	£41
Granny's Garden CD	£32
Guardians of the Greenwood	£51
Hutchinsons Encyclopedia	£15
Kiyeko	£Calla
Musical Instruments (MS)	£44
My 1st Incred. Amazing Dictionary (DK)	£36
PB Bears Birthday Party	£37
RiscDisc Vol 1 / 2 CD	£17 / £20
Simon the Sorcerer CD	£41
The Way Things Work (DK/IMS)	£44
Ultimate Human Body (DK/IMS)	£44

Applications

Carriage: a=£2, b=£6, c=£8

Acorn C/C++ (Acorn)	£229c
Advantage (Longman)	£51a
ANT Internet Suite (ANT)	£110a
ArcFax (David Pilling)	£31a
ArtWorks (CC) **Limited Offer**	£88b
Card Shop (Clares)	£23a
Chameleon 2 (4Mation)	£39a
Compression (CC)	£34a
DataPower (IOTA)	£105b
DaVinci (Spex)	£Calla
Disc Rescue 2 (Look)	£43a
Easy C++ (Beebug)	£102a
Eureka v3 (Longman)	£93b
FireWorkz Pro (Colton)	£110b
Font Directory2 (Look)	£42a
Font FX (DataStore)	£12a
Hatchback (4Mation)	£35a
HTML Edit 2 (R-Comp)	£42a
ImageFS2 (Alt Publ)	£43a
Image Outliner (IOTA)	£52a
Impression Style / Publisher	£80b / £125b
Impression Graphics Loaders (CC)	£40a
Impression Text Loaders (CC)	£30a
MacFS / MacFS Lite (CC)	£89a / £50a
Ovation Pro	£175c
PC Pro (without PCExchange)	£38a
PC Pro (with PCExchange)	£47a
PC Sound Professional (R-Comp)	£27a
Personal Accounts (Apr)	£40a
PhotoDesk Light (Spacetech)	£120b
PhotoDesk2 (Spacetech)	£245b
Prophet (Apricote)	£154b
Resultz (Colton)	£85a
Rhapsody (Clares) v3	£84a
S-Base2 Personal / Developer	£54c / £100c
ShapeFX (Datastore)	£12a
Sibelius Junior	£50a
Sibelius 6 / 7	£163b / £898b
Sleuth2 (Beebug)	£99a
SparkFS (Pilling)	£24a
Speech 2! (Superior)	£24a
StrongGuard (ARMClub)	£24a
Studio24 Pro (Pineapple)	£130b
Textures (R-Comp)	£10a
Touch Type (IOTA)	£42a
Top Model 2 (Spacetech)	£149a
TurboDrivers Canon/HP or Epson(CC)	£47b
Vector (4Mation)	£72a
Web Designers Toolkit (R-Comp)	£26a

Games (Carriage £2)

Alone in the Dark (Krisalis)	£27
Birds of War (4D) 2Mb	£24
Break 147/Superpool	£24
Carnage Inc (4D)	£19
Chocks Compendium	£24
Crystal Maze (Sher)	£26
Cyber Chess (4D)	£24
Darkwood (Eclipse)	£23
Drifter (4D)	£30
Dune II (floppy) (Eclipse)	£30
Empire Soccer (Maglm)	£24
E-Type Compend. (4D)	£19
E-Type 2 (4D)	£24
Fire & Ice (Times Warner)	£22
Global Effect (Eclipse)	£30
GODS (Krisalis)	£10
Haunted House (4D) 2Mb	£19
Holed Out Compendium	£19
James Pond (Krisalis)	£10
Krisalis Collection	£25
Lotus Turbo Chall2 (Kris)	£22
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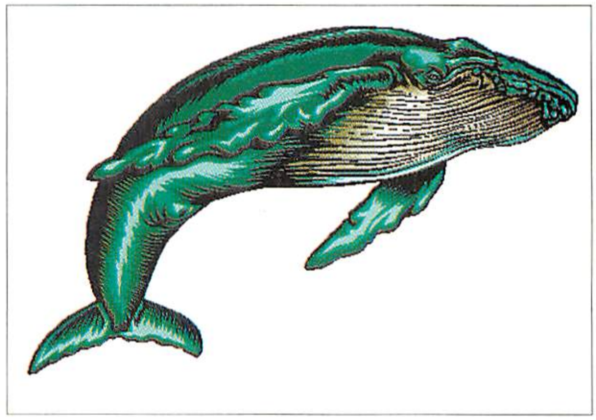
OCT 97

Cutting edge clip art for Acorn users at PC prices

Akalat Publishing have become the UK distributor of a major new clip art collection and have targeted the Acorn market with this stunning product. With nearly 80 per cent of all Acorn machines having CD-ROM drives, there is certainly a potential pool of buyers for New Vision Technologies' (NVTech) *Task Force* clipart collection.

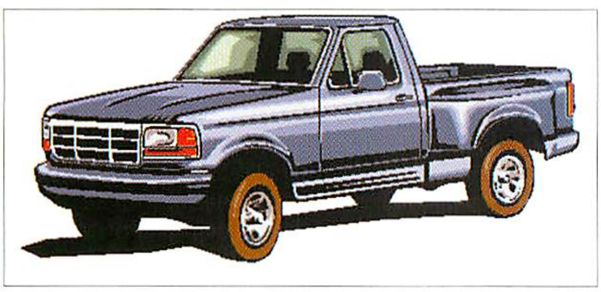
The CD-ROM is made up entirely of PC and Mac compatible vector graphics and bitmaps, every file catalogued in a beautifully printed full colour manual. It is difficult to call it a manual; it is more of a book spreading the 10,000 graphics over 380 pages. It is astonishing that such a product costs just £34.95 (including VAT).

The Acorn version comes with a free PC file translator which can convert the Windows Metafile and CGM format graphics into *Draw* files. *ChangeFSI*, supplied with RISC OS, handles the 500 BPM bitmap files provided.



Of course there are other packages currently extant on the Acorn platform which facilitate the conversion of foreign graphics files. These include *ImageFS* (Alternative Publishing), *MetaConv* (Keysoft) and the Shareware program *Translatr* (John Kortink).

The quality and range of this collection is certainly among the best available on any platform for the money. All the usual categories are included such as business, medicine, food, hands, architecture and so on, all maintaining a commendable level of stylistic homogeny although the styles are more often sketchy or cartoony than 'photo-realistic'.



It is not the first PC and Mac clipart CD-ROM for the Acorn – most PC collections are compiled of files that Acorn programs can import. However, it is novel for an Acorn publishing company to be distributing such a product and good that they have dedicated time to produce a disc and some extra literature specifically for the Acorn market.

Unfortunately, the speed and image manipulation effects of the specially designed PC viewer will not be available to all Acorn users, only those running their CD-ROM with a PC co-processor.

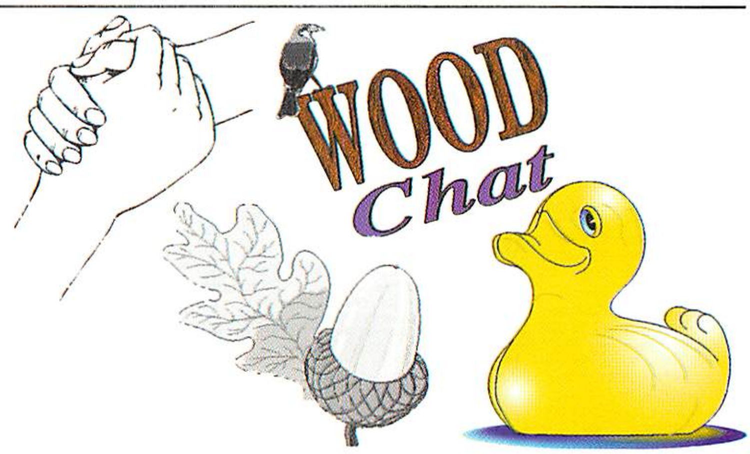
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Pictures of the month

Bimal Jangra is this month's winner with a whole disc full of *Draw* and *ArtWorks* files created using a lowly A3000.

We used some of the best of Bimal's graphics to make the composition which demonstrates effective use of colour and graduated fills (duck), interesting 'texturing' of fonts (wood) and the potential of simple line art with little or no colour (hands).

The almost too good to be true prize of £20 makes its way to Bimal Jangra. This huge amount could be yours too, so keep sending your creations in to me – but please only send DTP entries as files (*Ovation Pro*, *Impression*, *TextEase*) or screenshots.



Professional Digital Camera

A couple of months ago Fujifilm launched a 1280x1000 pixel compact digital camera. The RRP is just under £2000 which is a good sign that professional SLR cameras' digital technology is going to move down into the 'affordable' £300-£500 price range. There are plenty of very compact yet powerful small conventional cameras and good, inexpensive SLRs out there which would make good homes for 1.3million pixel CCDs. I wonder if we will ever see disposable digital cameras?

Contacting me

You can contact the graphics and DTP page by writing to me, Jack Kreindler, at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to augrafix@idg.co.uk.

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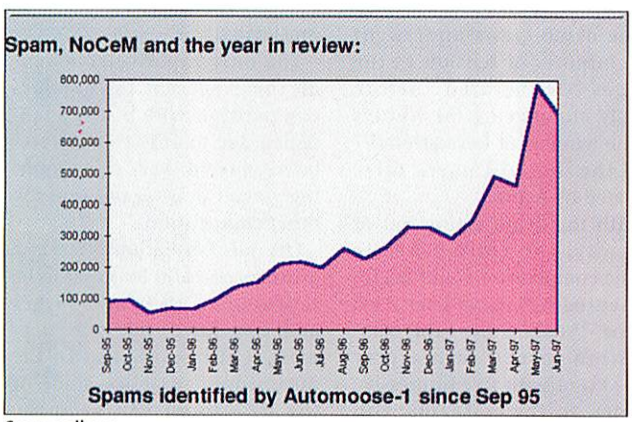
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comms

Spam and Anti-Spam – fighting the junk e-mail menace

The *Monty Python* Spam-loving-Vikings sketch is reputed to have been the inspiration, if the subject deserves that word, for the use of the term 'spam' to mean increasing amounts of unwanted and unsolicited e-mail and e-news arriving in one's e-mail box. The *Cancelmoose™* Home page at **http://www.cm.org/index.html** shows the worrying growth of spams since September 1995.



Spam sails up

Usually the spammers send their unwelcome fare from accounts that are rapidly removed by the service providers, so as *Postmaster* of the arcade.demon.co.uk e-mail domain, I get lots of returned failed-mail notices for unknown BBS users. Other valid BBS users are unfortunately forced to accept the spammers' postings. Although our e-mail system has a 'Kill' file of e-mail addresses from which not to accept e-mail, the spammers often use randomly-generated addresses to get round this.

I always recommend that if you receive a spam e-mail, never reply to it with a 'remove' request, as this will only confirm that you have received something. Equally, be very careful when accepting any advice to visit the Web site **http://www.iemmc.org** for name removal information.

Your Web browser may offer unsolicited information about you without your knowledge, and by going to the BrowserCheck Web site at **http://www.helie.com/BrowserCheck/** you can examine what it's revealing. Using *ANT Fresco©*, I can see that my name and software serial number are given out, but fortunately not my e-mail address. There are interesting links to other anti-spam and e-mail privacy information pages here too.

Try **http://www.anonymizer.com** and select 'Don't believe us?' for the lowdown on yourself. There are various techniques you can use to try to reduce the spam you receive, and some are more effective than others. Unlike junk snail mail, delivery of spam e-mail is paid for by you, not the poster, so what can be done to prevent spam actually arriving?

One simple technique is to deliberately misquote your e-mail address in postings to Usenet newsgroups, confusing a 'spambot' auto-responder, but enabling a human respondent to work out what your e-mail address really is. An example might be david@arcade.demon .co.uk.spam-free.zone or even just nospam@see.below.for.real.email where you put your real e-mail address in the footer of your message.

Smart spambots might be able to see though these though, but one suggestion I've seen is to use postmaster@[127.0.0.1] which is a rather techie way of throwing a spanner in the spammers' works.

Solutions like these tend to transfer the inconvenience of the unwanted traffic from you to your Service Provider, so it's worth letting them know you're having problems.

Demon Internet accept spam and other Internet abuse reports to **abuse@demon.net**, or you could try sending an explanation and a quote of the entire header and text to abuse@ the sender's domain name. Send a copy to **spam@arcstone.demon.co.uk** while you're at it to update Robin Clive-Matthews' Anti-Spam page at **http://www.arcstone.demon.co.uk/spam.html**



Practising safe checks with ANT Fresco©

Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

Many happy used Acorns

Steve Ware's Acorn Free Ads page on his Demon Homepages site provides a one-stop page for all Acorn Sales and Wants. His intention is to make it easier to find and sell second-hand Acorn equipment. The section has separate listing pages for computers and hardware, software, miscellaneous items and swaps, so e-mail Steve with your sales or wants details.

Acorn Free Ads
http://www.woodfrd.demon.co.uk
adds@woodfrd.demon.co.uk

GIF Wizard news

Still committed to providing free GIF compression services to non-commercial users and non-profit-making organisations, the GIF Wizard site I described in the July Comms page has moved to a new server and updated its services.

If you want to check an entire page in one pass, you can enter the URL and GIF Wizard will create a thumbnail of each graphic with data on height, width, size and estimated compression available. Simply click on the thumbnails to complete the processing on each graphic.

GIF Wizard
http://www.gifwizard.com/

Electric soup

Ian Wilkie Logan's Web pages offer a variety of interests from Railways and Railway Operation, through poems by Florrie Gillanders, music by Connie Francis and Brenda Lee. Also featured are pictures of his home town of Langholm in Dumfriesshire, Scotland, to the computing subjects of GIF animation and Web page validation topics.

Ian recommends A Kinder, Gentler HTML Validator at http://ugweb.cs.ualberta.ca/~gerald/validate/ which you can try out on his own pages, and to visit The Web Design Group at http://www.htmlhelp.com/ for good advice about page design.

Electric Soup
http://homepages.enterprise.net/iainlogan/

Demo comment

Regular readers will have noticed the profusion of demo reports in recent issues and I have to confess the coverage of more serious software has suffered slightly. My apologies if demos are not your cup of tea, but the current demo renaissance does deserve special coverage.

I've been PD editor for many years and have spent most of that time struggling to encourage the Acorn demo scene. At last things are really taking off and it needs to be celebrated. Core groups like Icebird, TXP, Kulture and DFI are encountering competition from up and coming teams like the Nutters, Topix, Expression, Origami and Paranoia – all of whom are active on the scene! At the same time, with the StrongARM processor we now have a real power boost to demo coding – the likes of which has not been seen since the move from lowly ARM2 to the cached ARM3.

Cash?

An interesting module has appeared on various sites on the Net that hacks OS 3.7 and forces the StrongARM to cache the screen memory. Although this tends to mangle the desktop considerably, it gives a massive speed increase to demo or game code. Running something like the *Iron Dignity* demo with the module enabled makes the code pretty nifty. Now we just need a hack that can be turned off so we can return to the desktop afterwards without any side-effects...

Kulture on the Web

Kulture have followed up their first demo release since the re-launch of the group with a complete re-design of their Web pages. Full details of the crew, their plans for the future and their up and coming 3D engine Scorpion, can be found at:

http://sidonie.imag.fr/AcornDemos/Kulture/

Revelation '97 report

Arriving in Welwyn Garden City before the opening of the Acorn South East show, I have to confess feeling slightly nervous about the show and demo competition. Despite the enthusiasm of the exhibitors I couldn't help worrying that the small show venue would remain near empty all day.

When the doors opened I couldn't have been more wrong – the show was packed out! The demo competition was also very popular and began with various demo crews testing their work on the competition Risc PC and doing last minute bug fixes throughout the morning.

At 2pm the competition kicked off with the *Freestyle* demo and a horde of demo fans struggled to see the screen and watch the show. Following Kulture's entry, a graphically impressive DFI release graced the screen of the StrongARM machine.

The most impressive shown was Fluoro by the Nutters. Put together with a good deal of style, Fluoro was the obvious prize winner from that point on. As well as the three main contenders there were also entries from Paul Raine and a disappointing Origami release which was hampered by lack of StrongARM testing.

The demo crews underwent five minutes of tension as the judges deliberated before finally announcing the Nutters as the winners of Revelation '97 and the digital camera prize donated by Acorn.

With the demo action out of the way, the voting for the music competition could begin. Presented by *Acorn User*'s PD editor – yours truly – the competition turned into a very close event with five impressive entries. In the end, Toby Gill secured first place winning the *Melidi* MIDI sequencing software with a track called 'Rush'.

A range of styles were present, but Toby's up-to-date drum 'n' bass sound helped him take first place. Well-known Kulture musician, Exel, came a close second with a funky if short four track mod (winning the second prize of an AU subscription), with the remaining places taken by Billy Kotsias, Nytrex and Chris Davis. A good showing for a scene not normally recognised for its musicians.

The only negative comment on the event was the graphics competition which was abandoned due to only two pictures being entered. Very disappointing given the work put into the other competitions.

Overall, Revelation '97 was a great success and looks set to be repeated in 1998 at a larger and, hopefully even more popular, South East Show. In the meantime, let's hope some of the UK groups can keep the Revelation momentum up by entering the next Acorn demo competitions which take place at Interjam '97.

A mention must be given to Acorn and Liquid Silicon for sponsoring the event.

Freestyle

Freestyle was the runner-up at Revelation '97, but was limited by the competition deadline. A couple of weeks after the event and the demo has been finished off and released on the Net.

FreeStyle is by a group of familiar characters called 'Kulture'. Kulture have in fact been in demo-land for a few years as they were called Quantum not too long ago – in true demo tradition they had to change their name at least once.

After transferring the 1.8Mb file from the Internet on the lowly uni PCs to my top-notch-power-box, I unzipped the file and double-clicked on this new demo, making sure the stereo was on with maximum bass because I knew the latest Exel epic would be good. I then loaded it and watched the monitor as a reddish hued picture faded on and off the screen. As soon as I started muttering the words, 'Where's the music?', the music kicked in. Exel has produced a cracking track that not only damaged my powerful speakers but also my precious eardrums.

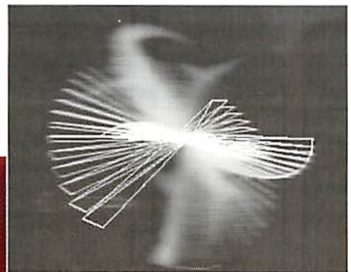
I shifted my gaze from the hi-fi volume control back to the screen where some initial words faded away to be met with a glorious reddish/yellow picture that also faded with the familiar touch of Quantum class, perfectly timed to the music.

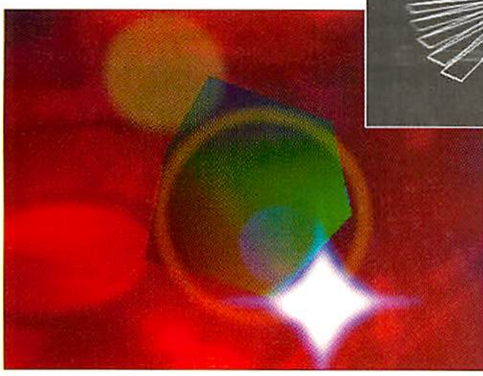
The main part then appeared – a rotating 24-bit gourard shaded cube with a lovely looking star rotating around it, complete with lens flare. The cube rotates for a short time before transparently fading away, soon followed by the backdrop.

Next up is a 3D rotating cross with added motion-



blur and then a smoothly plotted sequence of plasma, presented as with the rest of the demo, in 24-bit colour. The credits are then plotted transparently over the top before



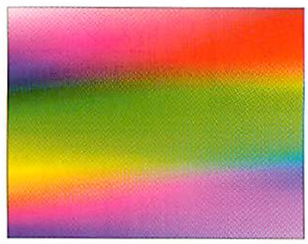


another screen fade and the end of the main section of the demo.

The demo finishes with the final graphic of a three screen sequence which is cleared with a nice 24-bit blur effect. This is merged into a flared Kulture logo that blurs into its RGB components before fading down to black with the music. Without giving too much away the secret part is in actual fact just another screen but I'm sure you don't want to miss it.

My only niggle with the demo is that it's far too short. My computer suffered battering rams of abuse when the demo finished because I thought it had crashed. Me want lengthy demos, me want more effects but then again, this wasn't intended as TXP style 'legis arte'.

Kulture's Freestyle demo can be found on the Digital Databank BBS or on the Acorn Demo Web site at http://sidonie.imag.fr/AcornDemos/ Remember that you'll need a StrongARM processor to see the demo properly. Kulture have already announced that they are planning to release a further demo at the German Interjam '97 party in the autumn.



Nathan Atkinson

Fluoro

As the winner of Revelation '97, Fluoro needs very little introduction. It's a demo with a laid back style and professional presentation which has at last become the norm in the best of the recent Acorn releases.

Beginning with a few still graphics and some stylish logos depicting the Nutter's 'Reverse Nation' label, that are whirled onto the screen in trailed 3D, the demo soon gets down to some serious effects. The main section begins with a lit, bump-mapped picture followed by a sequence or two of rotating 3D boxes. Probably the most impressive effect is a warping transparent 3D object that appears to refract the picture plotted behind it. All very smooth with StrongARM power behind it.

The demo is finished off with a nicely lit 3D face followed by the greets and credits plotted over a warping textured background which looks suspiciously familiar. The effect transitions are limited to fades to black in-between each effect but a number of nice ray-traced pictures help to break up the overall structure.

The music is a smooth and laid back piece of drum 'n' bass that complements the demo well, although little timing is used in the demo. Produced by sampling an existing song it isn't as technically good as the music in Kulture's Freestyle, but it still sounds very nice out of a large pair of speakers.

The Nutters chose a 480x352 screen mode in only 256 colours which gives a big speed increase – putting less strain on dumping gfx into the screen memory along the slow bus – but looks decidedly worse than the lower res but 24-bit colour mode used in Freestyle. This leads to some rather dodgy shading on the 3D cubes where better use of the definable palette could have been made. It is also a shame that the impressive ray- traced pictures had to be shown in 256 colours.



So, as always, there's something for a perfectionist PD editor to complain about, but on the whole, this is great news for the UK demo scene. Fluoro is a definite sign for the up and coming demo crews out there. You've gotta have stylish production to compete. Fluoro can be found on the Acorn Demo Web site at http://sidonie.imag.fr/Acorn Demos/







Demo help

With all the technical demo talk, beginners may be a little confused what all the fuss is about. So don't let yourself be called a 'lamer' – the rather more direct scene term for people who don't know about demos, and check out some of the demo sites on the Net.

For all things Acorn, Frederic Elisei's Acorn Demo site at http://sidonie.imag.fr/AcornDemos/ is the place to head. Frederic hosts or has links to all the main demo groups pages. PT's DFI page has lots of stuff for demo beginners. For a more in depth discussion about what demos are all about, try the PC Demos page at http://www.cdrom.com/pub/demos/hornet/html/demos.html

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to aupdpage@idg.co.uk.

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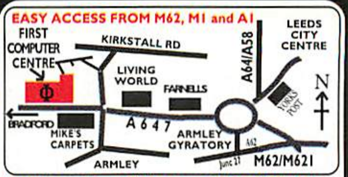
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Especially for the uninstalled

In my last column I looked at the state of play with the PC card now that the technology has settled down somewhat. For those of us who have had our cards for some time it is easy to forget that many of you are still thinking about buying – and facing the task of installing it. So, on your behalf, I asked Aleph One what the most usual problems are with installation.

ReadMe in future

First off is inevitably the problem of installing *PC Pro* for the first time, or upgrading to PC Pro from *!PCx86*. And the biggest problem here? Simply not reading the ReadMe files – that's what.

If you are new to computers and RISC OS, the ReadMe files are usually there to bring printed material up-to-date with the latest developments. They are therefore essential reading if you want to get your installation right.

Remember, there may be more than one of them. It pays to wander through all the directories on the software discs and to read everything first.

Successful installation

Having installed the software and got your chosen Windows software running, it's important to realise that you haven't finished yet. The software installs the drivers into a suitable directory and some users apparently believe that to be enough.

You must ensure that the Windows software knows which drivers to use. How to do that depends on whether you are using Win3.1 or Win95, and is covered in the ReadMe notes. If you have an older RPC 600 you may still not be out of the woods. Full sound output depends upon having a 16-bit sound-card installed and all models need the sound channel enabled.

So if it is not working, entering *configure soundsystem 16bit at the command line may do the trick.

Problems

Some users may still experience hardware problems. Some of these turn out to be timing problems with the StrongARM chip: Aleph recognise the symptoms and refer you to Acorn to get a mod to the card.

Other problems are related to memory. PC cards need a minimum of 8Mb of RAM and Aleph One suggest you leave at least 4Mb for the Acorn which should have 1Mb of VRAM too. Aleph recommend a 100Mb partition for drive c which will be almost fully occupied by DOS and Win95. Then create a further partition for a drive d for software. This means you can relatively easily back up the system files on drive c.

Remember if you do have two partitions your CD-ROM becomes drive e. Bear in mind that the above memory recommendations are a minimum. Windows 95 really needs 16Mb RAM and if you are using *PC Exchange* with, say, a graphics package, you will find 4Mb for the Acorn a bit restrictive.

ASPI drivers

I've mentioned the ASPI drivers before but I've never covered them in detail as I've no hardware that could use them. I understand the single biggest application for these is to use scanners and Optical Character Recognition software which is well developed on the PC.

ASPI stands for Advanced SCSI Programming Interface and provides an interface between the drivers for SCSI devices like scanners and the SCSI bus. ARMASPI follows the correct standards but works by converting ASPI commands into something the Acorn SCSI system understands – hence the software is independent of which SCSI card you might have. Provided your hardware has an ASPI driver, it should work fine. ARMASPI can be downloaded from Aleph's Web site.

Software

The final problem area for all of us is that software either doesn't run or crashes. I covered some reasons for this in my last column. But, according to Aleph One, there was one I missed out. That is simply that anyone using a PC, be it an Acorn second processor or the 'genuine' article, will find that the scene changes so fast that problems are all too frequent. There's a list of software that works on our second processors at http://www.argonet.co.uk/users/dgs/pccard.html

My thanks to the staff at Aleph One for the information used to collate this page
Aleph One – Tel: 01223 811679 E-mail: info@aleph1.co.uk
WWW: http://www.aleph1.co.uk/

Contacting me

You can contact me, Mike Buckingham, by post at: *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP or by dropping me an e-mail at: aupcpage@idg.co.uk

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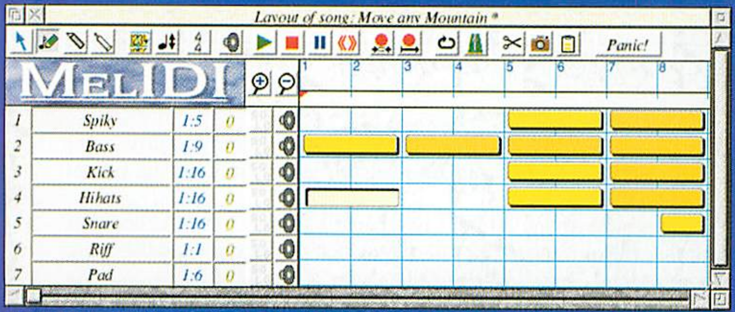
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MelIDI

MelIDI is a powerful pattern-based MIDI sequencer for all Acorn machines. It supports any MIDI interface (including parallel and serial) and requires RISC OS 3 and 2Mb of memory. A Risc PC and large monitor are *not* essential.

A demo disc is available on request, or visit the MelIDI web site at http://wkweb1.cableinet.co.uk/liquid/melidi.



Despite being powerful and flexible, MelIDI has a simple to use and straightforward drag & drop interface – you can move sequences around as you wish and drag and drop other songs and patterns in to merge them.

Patterns can be linked together (orange sequences), so that if you change the master pattern, the other patterns will be updated accordingly.

You can have any number of tracks your computer will allow – you are *not* limited to 64 tracks. MelIDI also supports up to 12 MIDI OUTs, giving you access to 192 MIDI channels.

You can apply basic transpositions or completely definable on-the-fly note mappings to sequences. For example, this can allow you to play GM files on a non-GM instrument.

Powerful quantisation and transformation functions are also available which are accessed via the piano roll, drum editor and map windows and the powerful event editor gives you fine control over your data (and can handle System Exclusive messages effortlessly).

With the addition of a separate plugin module, you can also sequence sound samples – there is no need to buy a completely separate package!

What *you* say:

"I do like the way that MelIDI detects the type of Controller command you are sending. MelIDI is a joy to use and is a lot more flexible and user friendly than any other MIDI sequencer that I have ever used. A great bit of software!" – J. Relf, Guild Entertainments

"MelIDI's pattern handling is lovely - much nicer than a separate window which forces you to be aware of the pattern nature, even if you don't want to be. MelIDI is very neat." – Name withheld by request

"I'm still finding my way through MelIDI but the combination with the [Yamaha] MU10 seems really amazing." – Peter Roberts

"Also, I love the drag'n'drop facilities of MelIDI. From rearranging the drum list to moving patterns, it's just so beautifully intuitive and elegant, and extremely impressive - I'm sure it must have taken a huge amount of work to implement." – Gareth Long

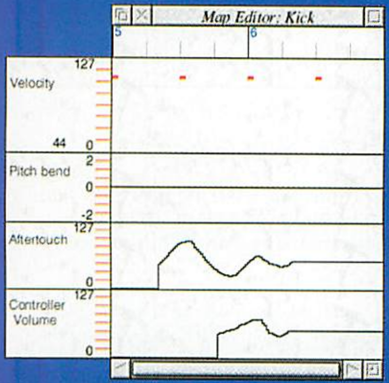
"Very classy. Very good, clear manual" – Martin Eastwell

"This is clearly the best and most comprehensive sequencing package available on the Archimedes. I was impressed by its clear and straightforward user interface, it is both intuitive and accurate. A pleasure to use. At last we have something on the Arc to rival Cubase and Cakewalk, it's about time!" – Neil Martin

"Can I first of all say that MelIDI is a brilliant program far ahead of anything available on the Acorn! Keep up the good work!" – Rob Ives

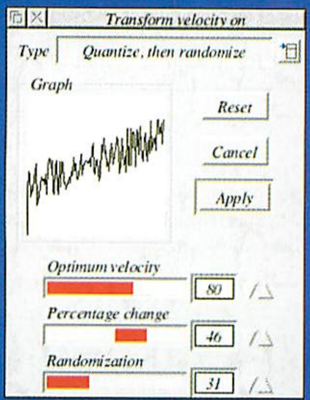
"I'm a user of MelIDI ... and it's a cracking package. MelIDI has all the features you'd expect from a top quality professional sequencer (I use Notator, Cakewalk Pro and Logic Audio on a regular basis) with some nice little additions like incredibly quick MIDI file loading, three playback modes for those with less able computers as well as its incredible all-round speed - I don't think it's ever taken control for more than half a second on any operation; and I've got an A3010!

There are the windows which are some of the best around: I particularly like the map window in which you can have graphic displays of changes in tempo, velocity, controllers (picked by name or number) and control of plug-in extensions. For all these, you can simply draw in a controller change and use the powerful transform function to change it all sorts of ways. Then there's the controller sliders. Beautifully compact and go all the way up to track number 'infinity'! I'm more than pleased with MelIDI and completely overwhelmed by the support I'm getting - definitely unparalleled!" – Matthew Burke

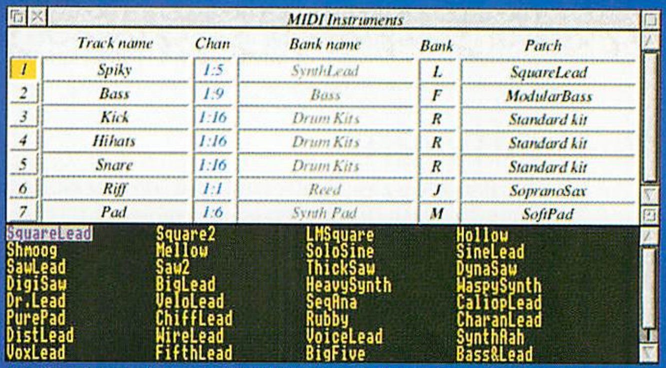


This example map window shows four of the possible controller maps which are available. These are easily alterable by drawing with the mouse.

Maps available include tempo, velocity, aftertouch and pitch bend, plus continous and bitwise plugin controllers for any unique devices (MIDISupport is required for using plugins).



From a map display, you can transform any event using various graphical transformation functions, including quantize, percentage or constant change and reversing.



All of the voices which are available to MelIDI can be selected by name, so there are no numbers to remember. A large number of pre-defined instruments from many manufacturers are supplied so setting up is straightforward. MelIDI can also make use of MIDISupport-compatible devices for even easier configuration.

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XG sound editor and MIDI interfaces from Q-tec

Following on from the news of Score Machine's *ArmEdXG* editor in the last music column, northern-based Q-tec have just announced version 2 of their *Karelia* package. *Karelia2* is a full MIDI file editor and allows all the DSP effects of the XG card to be utilised.

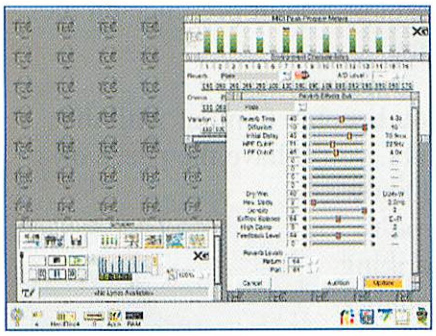
Users of the Audio Dynamics DMI card that have upgraded to the full spec card will already have the piece of software that started off development work on Karelia. *Conductor*, the program supplied with the DMI card, allows MIDI files to be played back while having channel and instrument settings altered in real time.

Karelia goes one stage further than this and provides access to all the extra XG voices plus full integration of Reverb, Chorus and Variation DSP (Digital Signal Processing) effects. SysEx (System exclusive) information can be saved out separately to cater for non-XG sequencing software.

Part of the General MIDI spec – and therefore part of the XG spec – includes a provision for lyrics to be included with a song. While this may sound odd at first, think of how popular Karaoke is in the East and then think where most electronics come from.

The new version of Karelia retails for £64.60 inc VAT.

Also new from Q-tec is a series of Parallel MIDI interfaces designed specifically for the



Acorn range of computers. These plug directly to the parallel interface on your computer and so avoid taking up any valuable expansion slots.

There are two versions of the MIDI Plus interface available – the Solo which has a single MIDI interface and provides 16 channels in and 16 channels out, and the Quartet which has a quadruple MIDI interface and provides 32 channels in and 65 channels out.

Both versions are constructed with metal cases to avoid any EMC or static which can sometimes cause problems in a MIDI setup. The Solo version has an LED to show when MIDI data is being transferred – useful for diagnostic testing.

At present, the interfaces only work with A7000 or Risc PC machines although Q-Tec are currently working on versions for the A5000, A3010, A3020 and A4000. One interesting result of their design is that both interfaces can be used on a PC with optional driver software.

The Solo MIDI Plus interface costs £89 inc VAT and the Quartet costs £134.88 inc VAT and both models come with a full five-year guarantee.

Q-Tec can be contacted at Q-Tec Technological Resources, Unit 16, Brougham Enterprise Centre, Brougham Terrace, Hartlepool, TS24 8EY. Tel: 01429 890800, Fax: 01429 890700, e-mail: sales@q-tec.demon.co.uk

Oreganda – music and audio mailing list

With the increasing rise in the use of e-mail, one of the most popular ways of keeping in touch with a group of like-minded people is with a mailing list. This is a similar idea to the Usenet newsgroups, but replies are sent directly to you rather than having to access them from group.

It's an ideal method of providing support for a program or subject which is why Oregan have done just that and set up the Oreganda mailing list. Oreganda has been running for several months and has, to date, attracted over 400 subscribers. It deals with any matter relating to audio and music making on the Acorn platform. So far, topics discussed have included Hard Disc recording on Acorns, General MIDI issues and naturally Oregan's own products such as *ProSound*, *MidiWorks* and *AudioPort*.

Like newsgroups, it's very easy to start a thread and through experience, I can confirm that are plenty of people – including Oregan's development and support staff – who are ready and willing to help with answers to problems.

The list address is oreganda@oregan.com

To subscribe to the list, send a blank message with the word SUBSCRIBE in the subject heading.

Synth Plus

ESP's virtual synthesiser has undergone a few changes resulting in a new version called *Synth Plus*.

This includes a number of advanced features such as extended polyphony – up to a maximum of 64 notes at once on a StrongARM-powered Risc PC – a reverb effect and additional banks for extra instruments. One of my major criticisms when I reviewed the original *Synth* was its lack of support for 8-bit sound. Well, ESP have obviously listened and there is now a version called *Synth 8* designed specifically for machines without 16-bit sound capabilities. All that's required is RISC OS 3.1 (or higher) and a hard disc fitted in your machine.

Synth Plus costs £58.70 inc VAT and Synth 8 costs the same as the original Synth at £46.95 inc VAT. Both Synth and Synth 8 can be upgraded to Synth Plus for £14.10 inc VAT.

Contact ESP for further details at Expressive Software Projects, 21 Beech Lane, West Hallam, Ilkeston, Derbyshire, DE7 6GP. Tel: 0115-944 4140, Fax: 0115-944 4150, e-mail: sales@exsoftpr.demon.co.uk WWW: http://www.cybervillage.co.uk/acorn/esp/

New features in MelIDI

While *MidiWorks* has received a lot of attention recently, we shouldn't forget *MelIDI*, the other new sequencer on the block. Stephen Borril, its author, has been hard at work improving it and new features now include internationalisation plus support for plugins. Much progress on the Pro version has also been made and this will include features such as XG-editing, MTC/SMPTE synchronising and compliance with the Acorn Time Code system.

Further information regarding the latest version of MelIDI can be obtained from its publisher Liquid Silicon at FREEPOST EH2725, Kirkcaldy, Fife, KY2 5BR. Tel: 01592 592265, Fax: 01592 596102, e-mail liquid@cableinet.co.uk WWW: http://www.cybervillage.co.uk/acorn/liquid/

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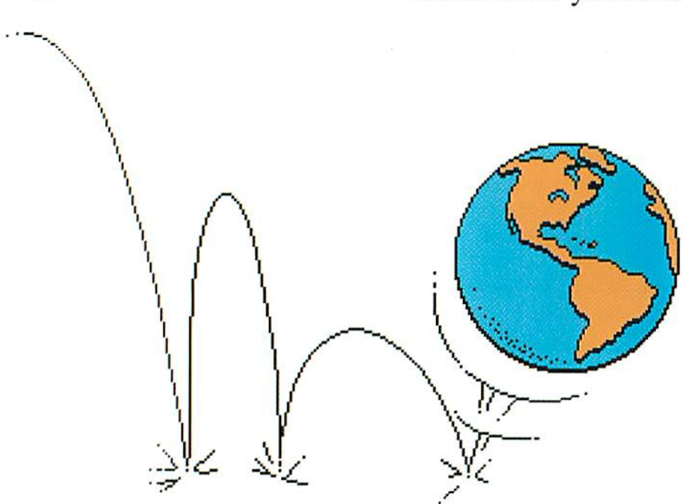
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* Enhanced account only, standard account has 5Mb free space

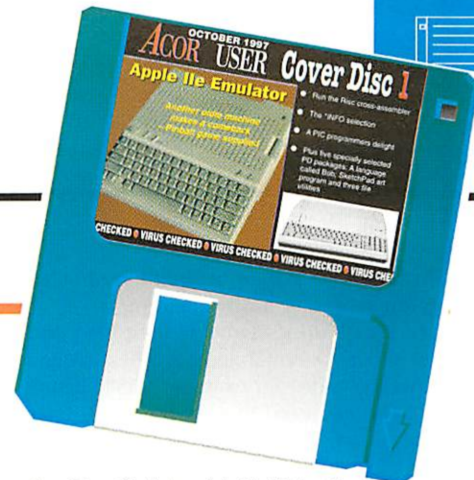


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cover disc



Apple IIe Emulator

Digital Jellyfish Design

Virtu is a freeware 128K Apple //e emulator for RISC OS with the following features:

- a 6502 or 65C02 processor
- support for standard or enhanced Apple //e ROMs
- two double-sided 5.25 inch Disc][drives supporting reading and writing of DOS order (".DSK") disc images selectable at run-time
- all standard video modes including 40/80 column text, lores, double lores, hi res and double hi res graphics in both colour and monochrome
- speaker sound support
- text printer output
- keyboard emulation of joystick/paddles input
- joystick emulation of keyboard input
- an integrated debugger
- saving of screendumps in any video mode
- saving and loading of the complete machine state

Requirements

Virtu is distributed with a dummy ROM image which provides just enough functionality to run the Raster Blaster game included. The ROM image from a standard or enhanced Apple //e is needed to run other software. Due to copyright we cannot actually distribute the ROMs but Apple (unlike Acorn with the BBC ROMS) have made them freely available. The enhanced Apple //e ROM image can be extracted from the latest AppleWin archive at the following URL: http://www.apple.asimov.net/site/emulators/applewin/

Note that this is an IBM PC zip archive, so you will need a utility such as !SparkPlug to open it. Extract the file named *Apple2e.ROM* and rename it to *Apple2eROM*, placing it in the *Data* directory after renaming or deleting the included dummy ROM image.

If you wish to capture the ROMs from your own Apple //e, see the *Tech* file in *Docs* for the required format of the ROM file.

Finally, Virtu requires disc image files of Apple][software. See the resources section below for information on where to find or how to capture such images.

Usage

Double-clicking on the !Virtu icon in the filer window installs Virtu on the iconbar and opens the options window. In this distribution a default script is included that runs at startup, loading the Raster Blaster game into memory. Clicking on the Virtu icon will leave the desktop and run the game. The dummy ROM image uses 65C02 opcodes, so leave the processor option set to 65C02.

To play a game of Raster Blaster press either of the joystick buttons (also emulated by the Alt keys) during the demo mode. Then press any key on the keyboard to toggle Easy/Hard, and a joystick button to select it. Similarly, choose the number of players and, finally, adjust the plunger with the joystick (also emulated by the keypad keys by default). During play, control the flippers with the joystick buttons.

If the included default script is renamed or deleted, a disc image should be dragged to the Disc][drive 1A field in the options window. Clicking on the Virtu icon will leave the desktop, initiate the Apple //e power-on sequence, and boot the disc image. Note, this requires that the dummy ROM image be replaced with an authentic Apple //e ROM image.

Pressing F12 at any time from within Virtu will pause the emulation and return to the Desktop. From there you can change options in the Options window, save or reload the machine state, or click on the Virtu icon on the iconbar to resume the emulation.

Virtu remaps important Apple //e keys and their functionality to the following Acorn Archimedes keys:

Left Alt	OpenApple and joystick/paddle button
Right Alt	ClosedApple and joystick/paddle button
Control+F12	Ctrl-Reset
Control+Left Alt+F12	Warm boot
Control+Right Alt+F12	Self test

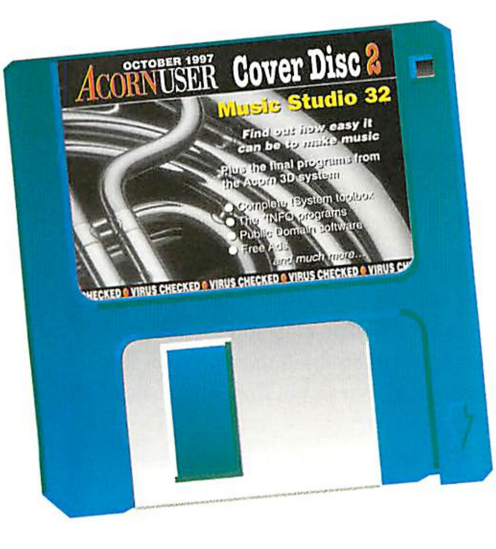
Resources

Check out the *Apple][Emulator Resources Guide* in the following FTP directory:

ftp://rtfm.mit.edu/pub/usenet/news.answers/apple2/emulators-faq/
and the following newsgroups:
comp.emulators.apple2
comp.sys.apple2

Music Studio 32 demo

Logotron



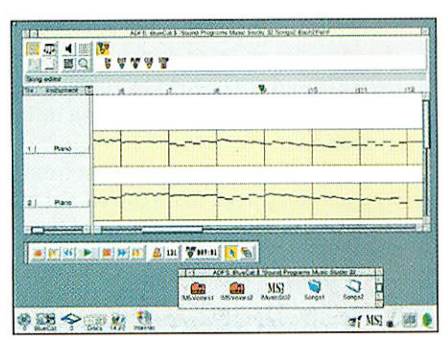
Music Studio 32 is a 32 track MIDI and Archimedes internal sounds music composition application, designed to record, edit, process and print musical information.

Data is stored on tracks and can be viewed and manipulated in one of the four editors: The Song Editor represents the music in a simple graphic way. Selections can be moved and copied easily with simple mouse control. The Score Editor enables more detailed editing of notes in traditional stave format. Objects can be added that will not affect the playing. The Grid Editor allows more detailed editing where traditional notation is not required or appropriate. The Layout Editor is where the score is paged prior to printing in outline fonts and objects.

This demo version is limited in that it cannot save or print and the application will only run for a session length of 10 minutes. After this it can be started again if desired.

Installation

This demonstration version can be run directly from the floppy disc or installed on a hard disc. Installing it on a hard disc will make it easier and faster to use. Do not attempt to run it directly from the archive, it may work on high memory machines but



anything with 4Mb or less will have trouble, see also other note on 2Mb machines.

To install Music Studio 32 on a hard disc, first update !System if necessary. Next create a directory, called for example "MS32demo". Into this you need to copy the !MS32demo application, !MSVoices1, the various songs and the rhythms directory.

When installing Music Studio 32 onto a hard disc, the computer will have noted the !MSVoices directories on the floppy discs. To stop it asking you for these during your first session, restart your computer after installing and before running the program.

Setting up sounds

The program is supplied set up to work with internal sounds. If you wish to use it in a MIDI system, after loading the program press middle mouse button on the MS32 icon on the icon bar, go to 'Global setup', click on the 'Sound' button and change the Sound default setting to MIDI. Click on Save to save the values.

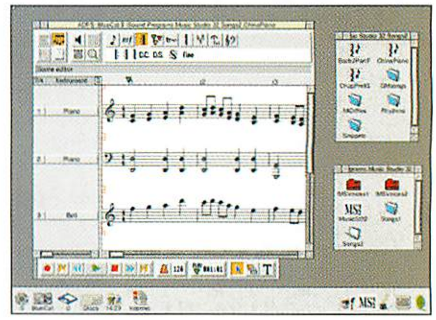
If you are doing any MIDI recording, you will probably also want to change the metronome setting in this dialogue box to MIDI. The MIDI thru setting is at the bottom of the dialogue box. The MIDI voices setup shown in the instrument setup dialogue box in the track settings area can be used to choose a suitable voice list for your MIDI instrument. When you have chosen a MIDI voices set, this choice can be saved by saving the Global setup on the application menu as above.



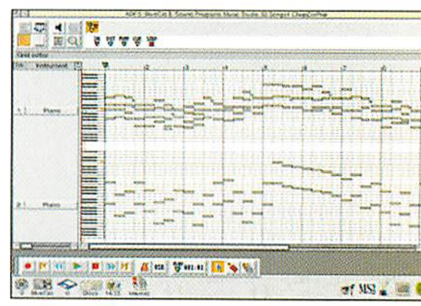
Running on a 2Mb machine

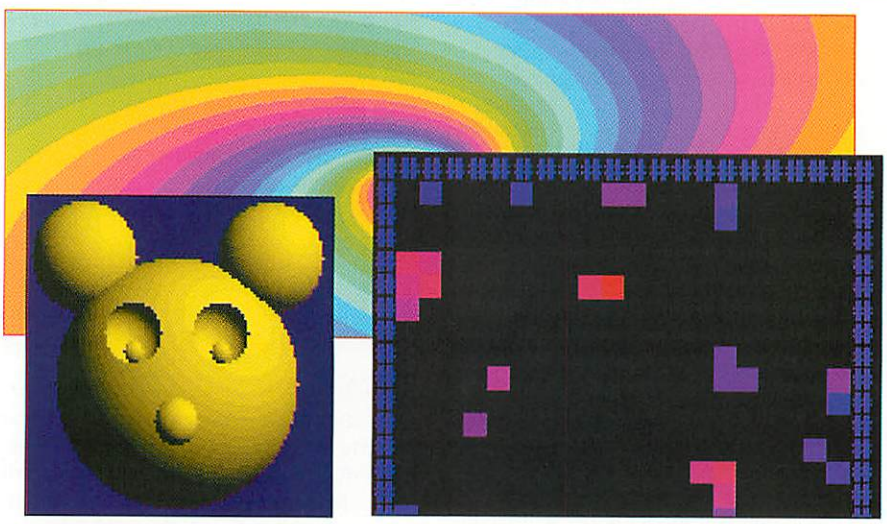
Music Studio 32 will run on an Archimedes with 2Mb of RAM, but only if sufficient RAM is made available. Methods of increasing free RAM include: quitting unused applications, setting the screen mode to use 16 colours rather than 256, reducing the font cache size, quitting and reloading Music Studio 32, restarting the computer.

Some songs may not load on a 2Mb machine. It is not possible to create large songs on a 2Mb machine. MS32 saves its songs in compressed format to save disc space. This compression process needs some RAM to operate properly. If there is insufficient RAM left to compress the song MS32 saves it in an uncompressed format instead. This will load back into the computer, assuming enough memory is available.



If at all possible MS32 should be run on a computer with at least 4Mb of memory. Working on the computer when there is very little spare memory is generally not a good idea – always save regularly.





Regular items

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- •All the *INFO programs

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- •The final programs in the Acorn Virtuality series
- •Another PIC programming kit
- •Object-oriented programming language
- •Sketchpad art program

Disc information

The software on these discs has been compressed using ArcFS 2 from VTi, and are opened by running a copy of ArcFS then double-clicking on the archive to open it. There is a copy of ArcFS on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH. If it verifies successfully return it to the Acorn User editorial office at the usual address.

The Acorn User cover discs have been checked for viruses using Killer version 2.700 from Pineapple Software.

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Rocking and reeling

Rob Miller makes music with MidiWorks

Roughly 10 years ago, when the Archimedes was still a prototype box within Acorn's R&D lab, the BBC Master was king. Even though there were the new breed of 16-bit machines around like the Atari ST and Amiga, the BBC Micro's older brother still managed to hold its ground – for a while.

Even though it was in its infancy, making music with a personal computer was one of the most exciting and innovative uses for an Acorn machine. One of the more prolific musicians of the '80s and '90s has been none other than one-time BBC Micro user Vince Clarke. Once part of Depeche Mode, and later the musical force behind Yazoo, Clarke made use of a BBC Master to provide the basis for his studio MIDI set up.

If you mention MIDI with relation to using computers, most laymen (and quite a few studio engineers) will come back to you with the two letters: S & T. The Atari ST has over the years become synonymous with MIDI music and is pretty well on the same level as Hoover is to the common-or-garden vacuum cleaner.

Apart from having a 16-bit processor and being faster than the BBC Master, the Atari ST had that all important MIDI interface built-in as standard. This turned out to be Atari's trump card and made their machine the first choice for musicians.

Whether Acorn failed to realise the importance of this, or were just too mean to stretch the budget to another socket, remains a mystery to this day. If I could go back in time and change a few things in Acorn's history, this would be top of my list by a mile. Oh well, you shouldn't dwell on the past. Back to the future...

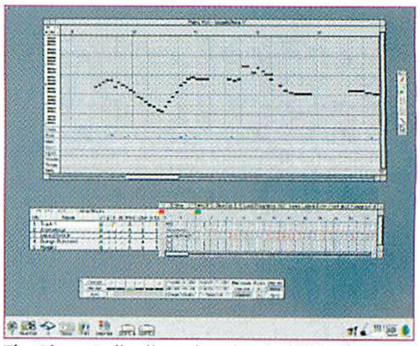
While the ST still remains a popular choice for the home musician, the demise of Atari has seen a shift towards using other machines such as the Apple Macintosh and, more recently, the PC. This current climate of PC dominance seems a strange time to release a product aimed at biting into the home studio market but Oregan Developments have done just that.

MidiWorks is a complete MIDI sequencing and composing system aimed at the both the home and professional musician. It's been written from scratch and includes all the 'standard' features that one would expect in such a program including piano roll, event list and drum map editors. While there have been other Acorn MIDI sequencers in the past, MidiWorks is probably the first serious attempt at taking a share of the ever-lucrative home studio market.

Starting up

Like most RISC OS applications, MidiWorks is a relatively small piece of code and actually fits on a single 800K floppy disc. Installation is simple and just requires the program to be copied from the disc to hard disc.

An installation program on the disc customises your copy of MidiWorks for your machine and then allows one further installation. Even though it would be feasible to use MidiWorks on a floppy-only machine, a hard disc is pretty much essential to take advantage of all the program has to offer and is therefore highly recommended. If you are going to be using computer-based samples in your compositions (i.e. running ProSound and/or StudioSound alongside MidiWorks), a large, fast hard disc is essential.


The Piano Roll editor showing individual notes

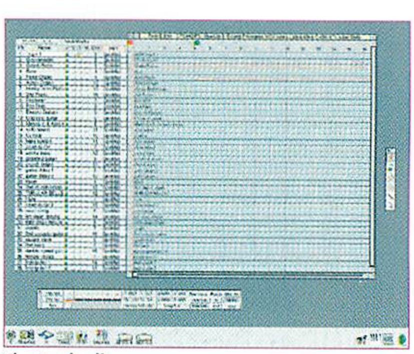
I have a 1.6Gb IDE drive fitted in my Risc PC, although even that could be regarded as relatively small, especially when working with digital audio. If you can afford it, I'd recommend the largest, fastest drive you can get your hands on.

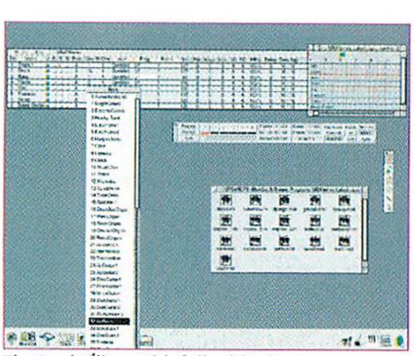
Two other items that you will need are a MIDI interface and some kind of MIDI instrument. Unlike some other RISC OS sequencers (for example Logotron's *Music Studio 32*), MidiWorks uses MIDI instruments to make sounds rather than using the internal voices of the computer. This means that unless you have a MIDI sound source, you won't hear a thing.

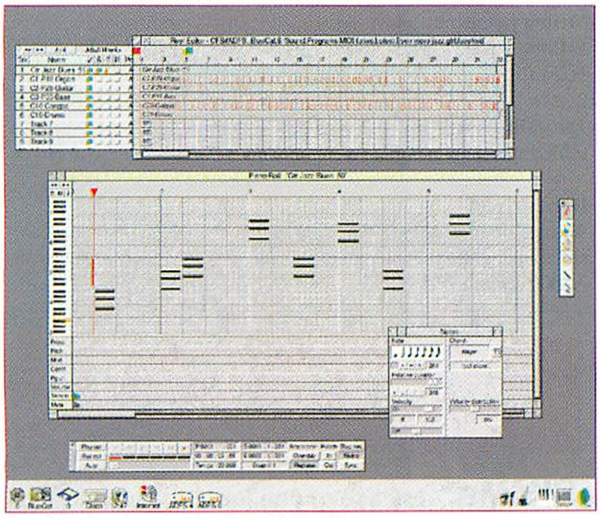
If you are a Risc PC owner, the very least you can get away with is probably ESP's *MIDI Synth* which emulates a General MIDI synthesiser entirely in software. While it's no match for dedicated hardware, MIDI Synth does a remarkable job and is a viable option for those on a limited budget.

The present version of the software supports 16-bit sound and an 8-bit version should be available by the time you read this.

Of course, if you're serious about music


The Reel editor


The Reel editor with full table showing


Entering chords onto the Piano Roll editor

making, you'll probably want to go for a separate module, or perhaps even a whole collection of MIDI instruments. Unfortunately it's a bit beyond the scope of this review to go into depth about which instrument you should go for. There are lots of factors including your budget, what sort of music you want to make and so on.

Probably the best thing to do is have a look through a magazine such as *Future Music* which contains all sorts of information including news and reviews, plus many tutorial features for beginners. What I would recommend, however, is even if you don't play keyboards, try and get a keyboard to play on and enter music. While it's possible to enter a complete symphony just with numbers, you're not going to have that creative flow that a musical keyboard offers.

Perhaps the best option at the moment, and one that covers virtually all your requirements, is the Audio Dynamics Dual MIDI Interface now marketed by Beebug. This is a single width expansion card that as well as providing two individual MIDI interfaces (hence its name), can also be upgraded with a General MIDI sound module and 16-bit sampling and playback facilities.

With a fully-expanded DMI card fitted inside your computer, you have what I'd regard as the minimum setup to use with MidiWorks. Add to this a master keyboard of some sort and you're ready to make music. (A review of the Audio Dynamics DMI card was featured in the July '96 issue of *Acorn User*.)

Once you have the necessary bits fitted to your machine you can then run up MidiWorks. If you don't have a MIDI interface, MidiWorks will not operate and produces an error message to that effect. This is quite an obvious test for the program to make, although I would have liked to have seen the chance to run some kind of diagnostic test to make sure everything is set up correctly. Linking up a MIDI setup can be difficult even at the best of times and is often the case of plugging (and unplugging) things until everything works.

Building a MIDI home studio setup is a bit like trying to build a car from spare parts. It's reasonably obvious how everything should fit together but you're not always guaranteed to get the results you expect or want. A lack of diagnostic testing doesn't detract from the usability of MidiWorks although it would certainly enhance its already excellent user-friendliness.

Setting up MidiWorks to work with your particular MIDI module (or modules) is also straightforward and a number of instrument definition files (IDFs for short) are supplied with the package. All the major manufacturers are covered and include Kawai, Korg, Kurzweil, Roland, Technics and Yamaha. If you have some obscure module you can create your own in a text editor and then import it into the program.

Reel time

Perhaps the most important window in MidiWorks is the Reel editor. This provides the user with an complete overview of the current song being edited and includes information such as the number of tracks plus the instruments being used. Like the rest of MidiWorks, it conforms closely to the RISC OS guidelines, but also uses a number of new and innovative techniques.

Because there can be so much information being shown in the Reel editor, Oregan have devised a clever new system called an information table to do just this. Imagine a kind of spreadsheet where each row represents a single track and each column represents a particular parameter for that track, for example, the instrument used for that track. Imagine also being able to rearrange the columns simply by dragging the column headers either left or right to the desired position.

Individual columns can be hidden if they aren't needed, or called up from a menu list if they are. Perhaps the best part is that all the settings you choose to show or hide get stored along with the file when you save your song. This means that it's also possible to set up a number of 'template' files which can be used as a basis for a particular type of song at a later date.

As well as being able to customise the table contents, the table itself can be dragged out from the main Reel editor window to show as little or as much information as you want. For users of large monitors and large desktops (typically 1280x1024), this means that it's possible to see all the various parameters at once as well as being able to see part of the reel window itself. In practise though, it's better to hide a few of the 'less important' parameters to free up space on the desktop.

Although the information table is important, the main part of the Reel editor is where the action happens. The Reel editor allows the user to arrange small groups of notes (known as patterns) into a complete song. Like the table, it's divided up into rows which represent the individual tracks, plus the horizontal axis represents the time line and is divided up into bars.

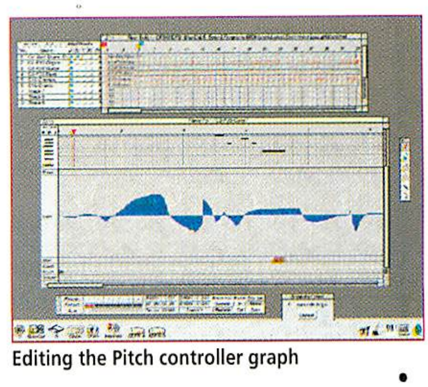
By default, the Reel editor uses a 4:4 master timing signature although this can be changed easily by clicking on an icon on the information table. Even though this is a simple task, it illustrates well the thought that has gone behind the design of MidiWorks. How often have you used a program where you keep having to search through menus to find things? Not the case in MidiWorks.

Using the Reel editor is very simple especially when using imported patterns. A drag and drop interface makes editing a fast and intuitive process, which is just what you need if you're writing or arranging music.

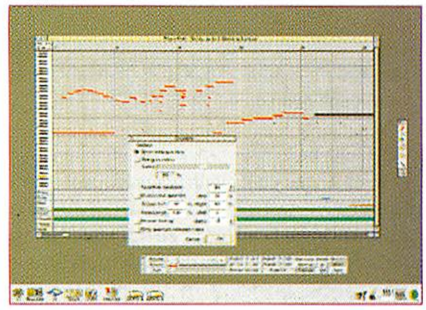
One slight criticism, which I'm sure could be changed in a future release, is the way that MidiWorks colours the patterns on the Reel editor. At the moment, they're all a kind of light blue, although it would be more useful to have them coloured depending on their contents. When you have a lot of patterns on the Reel editor, it can be quite hard to differentiate between them, especially when they're close together. The ability to choose their individual colour would remove this problem.

On a roll

Whereas the Reel editor is used to arrange patterns, the Piano Roll editor deals with individual notes. Like the Reel editor, the Piano Roll window displays information, in this case notes, on a grid. Here the columns represent the beats and the rows indicate the pitch of the note. A representation of a keyboard is shown on the left hand side of the window to make identifying notes easier. Adding notes to the Piano Roll is easy – just point where you want the note to appear and click. A separate


Editing the Pitch controller graph

Rocking and reeling



Quantising notes using the quantise tool

note window can be called up which provides complete control over the type of note produced including duration and velocity. It even allows chords to be entered which is particularly useful for guitar work.

Taking control

At the bottom of the Piano Roll window is one of MidiWorks' most impressive features – the Controller graphs. These are a graphical representation of the various controllers that the MIDI system uses and include Pressure, Pitch, Modulation, (General) Control, Program Change and Volume and Tempo. A special extra one called Meta is unique to MidiWorks and is used to activate external software or hardware at any chosen moment.

Put simply, the way in which MidiWorks has been written means that it's possible to get it to communicate with other programs, simply by issuing the right 'command' at the right time. Imagine if you had MidiWorks playing a song back and you wanted it to play a sample or sound-effect which your MIDI module is not capable of – if you have *ProSound* running alongside it, you can make MidiWorks pass on a message at just the right time to play the sample.

In the case of hardware, you might have a stage set up where you have the lighting rig connected through MIDI to your computer. MidiWorks can then be used to issue commands to activate lights at any chosen moment. The possibilities are virtually endless and I can see no reason why MidiWorks couldn't be used to 'orchestrate' a whole concert. Apple Macintosh systems have been used for this very purpose for some time now so it's good to see the Risc PC getting its foot in the door at long last.

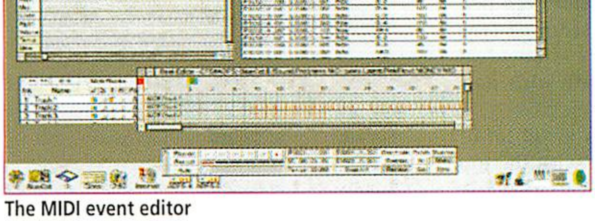
Editing the Controller graphs is very simple, with the mouse pointer being used to draw whatever shape required. Each graph can be zoomed in to make editing easier and then zoomed back again to save space. While it works well, I would liked to have been able to draw graphs using straight lines and perhaps even some kind of bezier curves. If you want a gradual tempo increase over a long period, it's particularly difficult to draw by hand although with a line tool it would have been easy.

Better than SysEx?

While it's possible to achieve perfectly good results using just the main features of MidiWorks, there may be times when you want to tweak just one or two notes, or perhaps have a closer look at how a song is structured.

The commands that are issued when a MIDI file is played are known as MIDI events and MidiWorks contains an Event editor specifically for the purpose of viewing and/or changing these commands at a low level. Events are a bit like MIDI machine code with each one being made up of a command, and then one or more pieces of data. A typical example is 'NOTE C 4' which would play a note of middle C.

There are many different types of MIDI event and MidiWorks is capable of recognising all those used by the General MIDI standard. It can also handle special events known as System Exclusive commands (SysEx for short) which are commands unique to a particular manufacturer or piece of hardware. If, for example, you have a keyboard that contains a number of instrument banks, it's likely that it will have special internal commands to switch between them. This is a SysEx command.



The MIDI event editor

MidiWorks allows SysEx data to be extracted simply by clicking on a SysEx command in the Event list, whereby a special save box pops up. It can also be re-entered anywhere in a MIDI file by dropping the file onto the Meta controller graph on the Piano Roll editor.

Processed music

Being able to enter and edit notes is only part of what a sequencer should do and so naturally MidiWorks includes many tools for processing recorded MIDI events. One of the most important, and perhaps most useful, of these is the Quantise tool.

Put simply, quantising is a method where a selection of notes – it could be the whole song – is shifted left and right slightly on the time-line in order to correct any timing mistakes that may have happened during recording. Imagine you have a good idea for a tune but your keyboard playing is a little off time. There is a built-in metronome feature which can help with this but it's not going to improve the finished product.

Quantising on the other hand can be used to fix any timing discrepancies and turn a sloppy tune into a syncopated masterpiece. Well, that's the theory anyway.

In some cases this may not be appropriate to the type of music you're trying to record. You might, for example, want to record some free-form jazz, but not have it too free-form. If you used normal quantising, you'd end up with the wrong effect but fortunately MidiWorks also supports Groove quantising which can still correct timing but maintain the original feel. Very clever indeed.

The way in which a piece of music sounds can also be transformed by using a special tool called the Logic Editor. This allows you to filter and/or transform individual MIDI events by providing a set of conditions that events can match. Describing its use in writing isn't easy and even using it for real can be difficult at first. It's really one of those things that you need to play around with for a while to get a feel for.

The manual gives one example of adding 'human feel' by processing the velocity of each note with a random element which appears to work well. I'm sure the Logic

editor has many uses although I would imagine that it needs a lot of practise to get decent results.

Ye gadz!

As well as the tools, MidiWorks provides a number of gadgets which are a bit like self-contained support programs. These include an on-screen clock which shows the current position of the pointer in a song, plus a metronome to assist with keeping time.

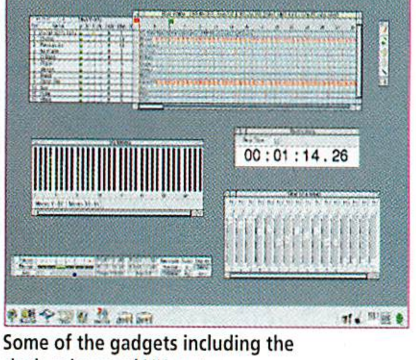
A MIDI filter window allows you to block the effect of one or more chosen controllers, for example you can filter out all SysEx data which might otherwise affect the way a song is played.

A VU Meter gives a graphical representation of outgoing MIDI information and is useful to monitor the volume of any channel at a given point in time. Although MidiWorks supports up to 64 channels at once, not all channels can be displayed together although they can be selected in one of two banks. Although it would have been nice to have them shown all at once, there are no real limitations and it works fine in practise the way it is.

An on-screen keyboard – a bit like the virtual keyboard program supplied with *Cakewalk* – can be used to play notes directly through a sound module. More usefully, it can also be used to enter notes into a sequence.

One of the trickiest parts of writing a long piece of music – and sometimes even a short one – is keeping track of where you are in the song. You might, for example, want to have a point where you need to keep referring to the beginning of a solo. MidiWorks' system of markers allows you to do just that simply by positioning the cursor at the chosen position and selecting Get marker. The exact point on the time line is then transferred to the Marker memory.

When a marker is stored, it is named using the information related to it. i.e. 'M2/L0006:2:001'. It's also possible to label a marker by either typing over it with just a word (or words), for example begin riff, or adding to it if there is space in the string. Having this limitation does mean that you have to keep 'word' labels short if you want to also keep the information and I would have preferred more space i.e., a longer string.



Some of the gadgets including the clock, mixer and VU meters

The other limitation concerning markers is that there are only eight of them. In most cases this is fine, but there's always going to be a time where you'll need more. Anyone remember Parkinson's law...?

Mixing it

One of the central parts of any studio setup is the mixer. This is where you control the volumes and stereo positions of the different channels and mix them together – hence the name. MidiWorks offers a real-time mixer which allows you to alter volume and stereo settings while a song is being played. It's very simple to use with sliders for volume and knobs for setting the stereo. Used in conjunction with the VU meter, it's also easy to check levels and adjust them if any are too high or too low.

All 64 channels can be mixed in real-time although the mixer window only shows 16 channels at a time. I guess that this is probably down to space constraint on the desktop as it would in fact be impossible to have them displayed side by side all at once. You can view all 64 channels in the Mixer preset window which is used to store up to 10 mixer configurations.

Summing up

While MidiWorks seems to do everything you want it to, the biggest problem I had was getting it to do it. This is not the fault of the program, but more of the manual. It's fine for telling you what each tool in MidiWorks does but not what you can use the tool for.

Even I had a few problems getting started at first and found it a case of trial and error. I guess that this could be due to the steep learning curve for such a complex program, but a few more pointers in the manual certainly would have helped.

A decent tutorial section would go a long way to solving this and I understand that Oregan have commissioned a separate book entitled *Composing with MidiWorks* which will be supplied free to all MidiWorks users. The mailing-list set up by Oregan is already a good start – see Music and Audio page – and there's nothing like a bit of user feedback to iron out the problems.

Like Oregan's other two music programs, ProSound and *StudioSound*, MidiWorks is under a continual program of development and so while the current release is fully functional, I would expect future versions of the program to offer even better facilities. Oregan's system of free upgrades via their Web site is an ideal method of keeping up-to-date with new versions of the program.

While it's going to take an awful lot of hard work to bring it in line with the top sequencers on other platforms (*Cubase* and Cakewalk), what MidiWorks does it does exceptionally well and I would expect it can only go from strength to strength. If you're interested in MIDI and have a Risc PC, it's the probably the most important program you should have in your software library. AU

XG control

The XG system is Yamaha's own extension to the General MIDI specification and includes among other things, more voices plus a number of DSP (Digital Signal Processor) effects. It's likely that quite a few prospective users of MidiWorks will have Audio Dynamics DMI cards fitted with Yamaha DB50 cards which comply with the XG standard.

Using these extra voices and DSP effects is particularly easy in MidiWorks and the program even recognises the fact that you are using an XG-compatible module and configures itself accordingly. Access to the DSP effects is possible using the controller graphs on the Piano roll window.

Product details

Product:	MidiWorks
Price:	£159.95 (full version)
	£99.96 (lite version) fully inclusive
Supplier:	Oregan Developments
Address:	36 Grosvenor Avenue, Streetly, Sutton Coldfield, B74 3PE
Tel:	0121-353 6044
Fax:	0121-353 6472
E-mail:	sales@oregan.demon.co.uk
WWW:	http://www.oregan.demon.co.uk
Product:	!Synth – software only General MIDI synthesiser
Price:	£39.95 + VAT
Supplier:	Expressive Software Projects
Address:	21 Beech Lane, West Hallam, Ilkeston, Derbyshire, DE7 6GP
Tel:	0115-944 4140
Fax:	0115-944 4150
E-mail:	sales@exsoftpr.demon.co.uk
WWW:	http://www.cybervillage.co.uk/acorn/esp/
Product:	Audio Dynamics DMI card
Supplier:	Beebug Ltd
Price:	£139 inc VAT
Address:	117 Hatfield Road, St Albans, Herts. AL1 4JS
Tel:	01727 840303
Fax:	01727 860263
E-mail:	sales@beebug.co.uk
WWW:	http://www.beebug.co.uk

Checking out the NetStation

David Dade gives it the once over

When I first played with the Acorn NetStation I decided that most home users would use this machine as Acorn intended, as a low-cost high-performance World Wide Web browser, with added wordprocessing and e-mail facilities.

However, for an existing Acorn computer owner and Comms user, a little knowledge is a dangerous thing when we realise that the Network Computer (NC) isn't just a dumb terminal – the box contains much of the functionality of the Acorn A7000+ computer. We'll look at the implications of this later.

The NetStation is an Internet access device with no local mass storage, so to perform Web and e-mail functions the machine makes a network connection to an Internet Service Provider (ISP).

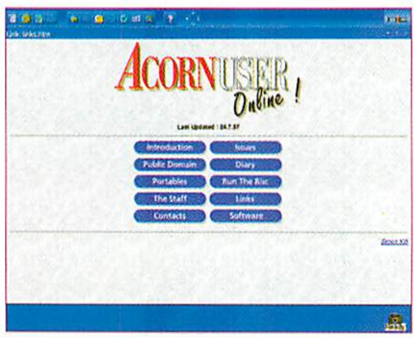
The ISP will have set up a specific NC support system that allows customer verification and login, Internet access for the Web browser and an e-mail address and the means to read and write e-mail online. All the home user has to do is plug in the TV and the phone-line, switch on, enter a PIN and press the 'Connect' button to begin browsing.

The model reviewed is the Acorn-badged NetStation modem version, containing the V34 BABT approved modem with a semi-captive telephone lead attached to the rear panel. Production versions of the modem support the full 33,600bps line speed.

A plug-top block mains adaptor is supplied which continuously powers the NetStation. A green LED on its front panel lights when in use while a red LED indicates standby or offline mode.

The RCA Phono video and sound outputs on the rear panel connect via the supplied SCART lead to your television, and the picture obtained on the TV's AV setting is very good, but you get a much clearer and steadier screen if you can use a proper computer monitor.

For a user not familiar with qwerty keyboards, the TV-style remote controller is adequate, but more experienced users will be frustrated by the A to Z layout of the alphabet buttons. Thoughtfully though, dedicated buttons for characters found in URLs, such as dot, slash, @ and colon are provided as well as arrow buttons for moving a highlight box around Web page hyperlinks. Other punctuation is obtained by using a shift button and the numeric keys.



As good a page as any to begin browsing with the NetStation

This custom-designed controller probably contributes quite significantly to the total cost of the package, and while it allows comfortable browsing with the NetStation from an armchair at a distance, the forthcoming full infra-red keyboard and trackball should make armchair e-mailing even easier, but will cost more. A standard wired PC keyboard could be also used which would be much cheaper.

Using a 15-pin lead to my Risc PC's monitor, its keyboard and a borrowed A7000+ mouse – the NC requires a PS/2 type mouse with a different plug from Risc PC – the NetStation powers up with a nice graphic logo screen and prompts to insert the Smart Card.

This is the size of a credit card with a pattern of gold contacts on one side, and is customised and supplied by the Service Provider supporting the NetStation system – ArgoNet in this case. On insertion, the screen changes to an 'Enter your PIN' prompt.

When you have done this using the hand controller or keyboard, the main 'Ready to Connect' screen offers three setup options to enter or change your ISP details, change your Smart Card PIN or set up hardware configuration of printer, modem and monitor.

Using the AKF85 Risc PC monitor, I was able to select 800x600 resolution in 32 thousand colours with a 'higher frame rate' option, giving a really nice stable picture with no flicker at all. The only modem setting you might want to change is the timer which drops the telephone line after a period of non-activity, which was set to 10 minutes by default.

As the brief instruction manual doesn't actually tell you how to stop a browsing session, I later discovered that pressing the power switch twice while online takes the machine offline immediately, certainly cheaper than letting the modem time out, while conveniently leaving the last page viewed on the screen.

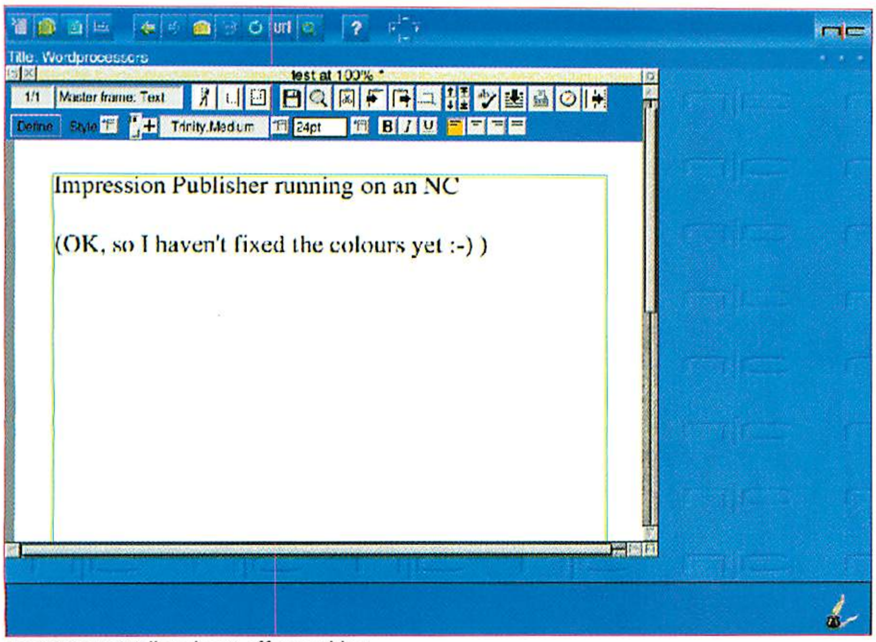
The built-in *NC Browser* is based on *ANT Fresco®*, and now that we have seen the latest Frames version of the ANT Suite's Fresco browser, the similarity of the Frames implementation is clear, while the NC Browser's dark blue screen layout design and colour are unique to the NC reference design. The offline screens on the NetStation follow these same colour and graphic ideas.

The review machine was set up for the ArgoNet NC system and when starting from switch-on, the NetStation took over two minutes to dial, login and display the ArgoNet NC home page. Thankfully, subsequent re-connection in the same session is much quicker if you have neither unplugged the power block from the NetStation nor removed the Smart Card.

The ArgoNet NC Web pages are a demonstration site with example headings and a



The ArgoNet NC system home page



Acorn's Dave Walker shows off something from his NetStation software collection

link to the ArgoNet NC Mail system. Most of the links lead off to real pages on the Web containing a lot of images that tend to slow up page rendering.

###Use ArgoHome/tiff: The ArgoNet NC system home page

To reach part of a Web page or frame that is out of sight, you drag the page background while holding down the Select button of the mouse or use the controller's arrow buttons to move a highlight box sequentially through the hot-links on the page, although some frames will have scroll bars as well. This highlight box is sometimes quite difficult to see against the image or page colours. While the version of the NC Browser on the review machine did not support JavaScript, animated GIF images are rendered well.

If the link is a clickable imagemap, a cross cursor appears which you can steer with the arrow buttons or the mouse. There are buttons for by-Page and by-Line movement on the controller, but they don't always seem to have an effect, and I found it irritating that the left and right arrows did not move the highlight box horizontally. Using the keyboard and mouse was altogether much more natural for me, and would be for most users with some previous computer experience.

The ArgoNet NC Mail system allows you to write, read and reply to e-mail using your Argonet NC system e-mail account while online. Incoming e-mails to you are converted by the ArgoNet server into Web pages which are summarised in lists of New, Old and Sent Mail, and you can build up an address book and favourite URL list too.

E-mail replies are typed in to Web page 'forms' which can contain quoted sections from the original message. You really do need a full keyboard to do this properly, unless you have little to say!

All this information is stored in your section of the file space allocated for your account on the remote ArgoNet server, so you have to be online and connected to access it. This is also where any documents you may create on the built-in word-processor *NC Writer* are stored.

NC Writer is loaded from the NetStation ROM when you click on the NC Word Web page link, and offers a good selection of the wordprocessing features of *EasyWriter*, the Acorn RISC OS software package by Icon Technology from which NC Writer is derived. Again you really need the full keyboard and mouse to use NC Writer sensibly.

What else the modem version of the NetStation can do initially depends on what the supporting ISP offers from its NFS remote filing system server. There is theoretically no limit to the variety of native software that can run on the NetStation, being a RISC OS computer in disguise, and many existing RISC OS software packages are being tweaked to run on the machine. There will be issues of copyright, site licensing and software version maintenance to be resolved before this will become commonplace.

Argo Interactive are the primary suppliers of Zip drive technology for Acorn machines and they have been quick to see that the modem NetStation opens up another market for these products. The eprom that contains the internal modem software also contains Zip driver software that allows the NetStation to start up locally from a Zip drive connected to the machine's parallel port.

While going against the Network Computer model of no local storage, this means you or your ISP could prepare a Zip cartridge of favourite software, games and applications to plug in and run on the NetStation without ever going online, and documents created while you are online can be stored locally on it too. Maybe you will soon be able to buy *NetStation Publisher* on a Zip cartridge?

While the modem version of the NetStation is tied either to a Zip drive or an online ISP, the Ethernet Network card version is the ideal corporate and school network solution for low cost-per-desk workstations, but for very dedicated enthusiasts could provide many interesting hours of fiddling.

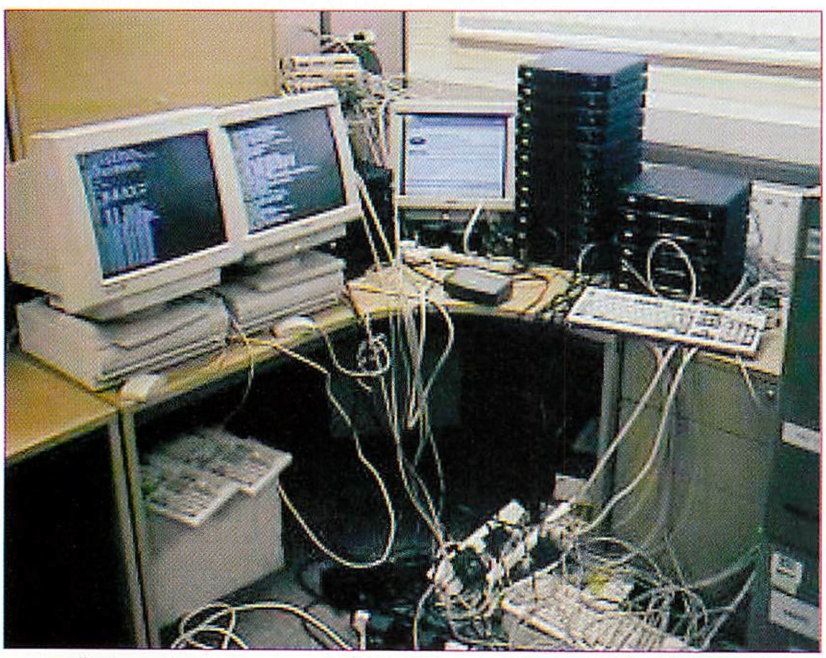
Acorn's Engineering Support Manager, Dave Walker explained to me that if you wanted to use an existing Acorn Risc PC to provide all the remote filing system resources of a local network to support the Ethernet NetStation, you would need to install and run a version of the industry-standard operating system, *Unix*.

The NetStation needs to communicate with standard Unix servers such as bootp, which allocates the machine a unique identity, an Internet address and other



Now you all know about my secret interest in ducks

Checking out the NetStation



Picture used with kind permission of Acorn

Dave Walker's pre-show demo setup of 24 Netstations and 2 StrongARM RiscBSD servers

network parameters, and also specifies the home directory to be mounted, and NFS (Network Filing System) which is the remote access shared filing system.

One such Unix package in the public domain is called *RiscBSD*, but installing and running it is not a trivial matter. RiscBSD requires at least an ARM 610 processor and, ideally, 8Mb of RAM and 200Mb of hard disc space. A separate partition is required on your hard disc, which is not something you can create when your disc is already half full.

You'll need an Ethernet card, cabling, connectors and a Hub. Because RiscBSD is a complete operating system it cannot run concurrently with RISC OS, so you'd need to dedicate a whole Risc PC to running RiscBSD Unix in order to serve a whole network of NetStations. You can find out more about RiscBSD Unix from: http://www.ph.kcl.ac.uk/~amb/riscbsd/riscbsd.html

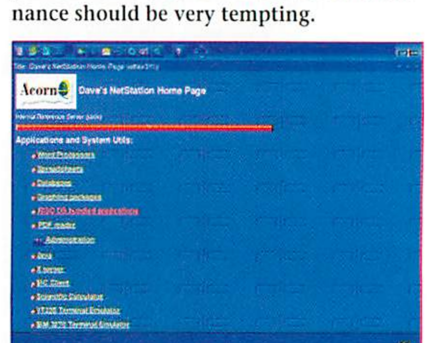
The recent Ideal Home Roadshow tour featured an all-Acorn demo setup of 26 Acorn NetStations and four StrongARM Risc PC servers running RiscBSD with an ISDN link to the outside Internet world.

The nice thing about administering your own network is that you can choose what to put on it, and Dave Walker's NetStation home page gives an idea of the range of software already available to his machines. Many existing RISC OS software packages can either be 'tweaked' to run on the NC, or released in special NC versions that their developers are now working on.

Acorn's Registered Developers have access to application notes that explain the differences between the NC and its closest equivalent RISC OS machine – a disc-less A7000+, and describe how to port RISC OS software to the NetStation. The NC has no filer window support for instance, but applications and programs can be launched from simple HTML hotlinks – even BASIC programs can be run as the NCOS ROMS do still contain BASIC V.

The Network Computer concept really comes into its own in the larger networked systems, such as in the corporate and school situation. Using such protocols as the *X Window* server/client system, each low-cost NetStation can perform as a full-featured graphical screen and mouse front-end to X applications of what may be quite another platform running on a remote client machine.

This will allow a great reductions in cost-per-seat for organisations which previously might have had individual copies of *Windows 95* applications like *Word* and *Excel* running on each desktop PC. The advantage of centrally-maintainable software and the NC's low cost, high performance and low hardware maintenance should be very tempting.



A peek at part of Dave Walker's list of working NetStation applications

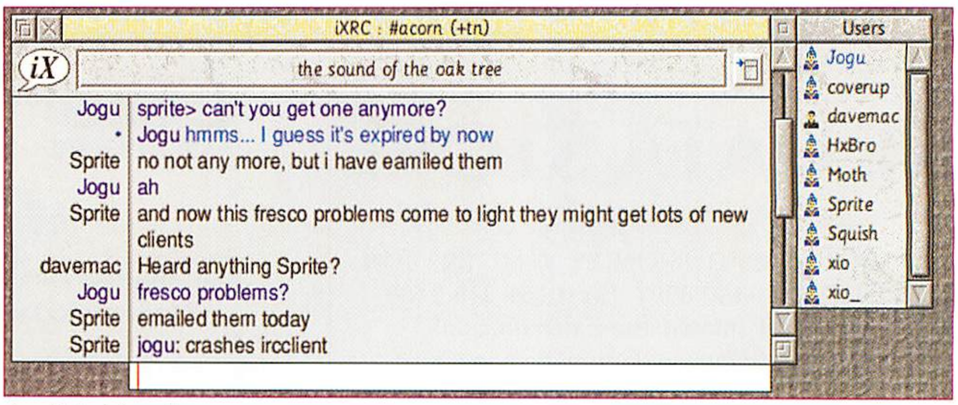
The art of conversation

Joseph Heenan tries out a new IRC client

Anyone who has been on IRC (Internet Relay Chat) over the last few months must have heard about *iXRC* – the commercial IRC client developed by Quadworks, a new Acorn developer specialising in Internet software.

iXRC arrives either on disc or by e-mail, as requested at the time of ordering. You get two programs (Installer and iXRC_Docs) and a registration code. Installation is straightforward – you run Installer, fill in your name, e-mail address, registration code, a few details about your computer and then drag an icon to where you would like iXRC to be installed. A window then appears with a progress bar, which quickly completes leaving you to move onto setting up the software.

The first time it's run, iXRC brings up a choices window. From here, you set the information that other IRC users will see about you – your nickname, real name and user info (usually an e-mail address or Web URL). The supplied server list includes the more common ones, so if you use one of those you're now ready to start chatting. The different varieties of server are explained in the documentation.



A quick look in on #acorn

Basic use

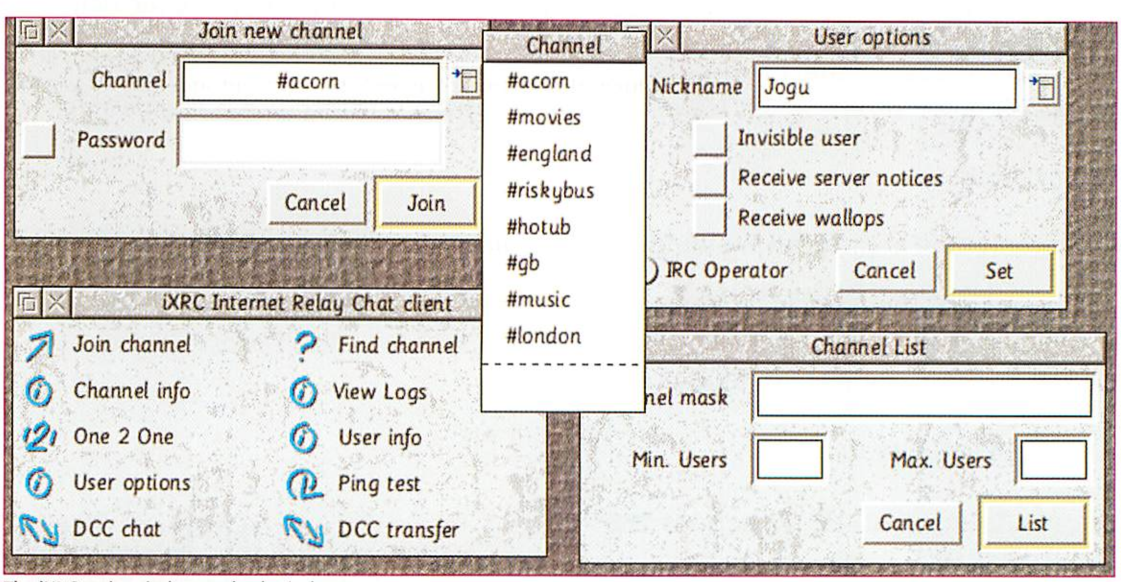
Once you are connected to a server, a dialogue box is shown asking you which channel you would like to join. Click on join, and iXRC's channel window appears. This has a number of sections – a small status bar at the top showing the current channel topic, a toolbar to the right containing the users present and a writable area below for you to type messages. The work area of the window has a movable vertical divider which nicks appear to the left of, with the text they've typed to the right.

By default, all the messages that appear on an IRC channel are logged into a text file with the name of the channel. All the common IRC operations are available from the menus and the '/' commands also exist for the more seasoned IRCer. Colour support is also included, Typing '<red>red text<green>green text' gives the expected effect, although some older clients do not support the colour codes.

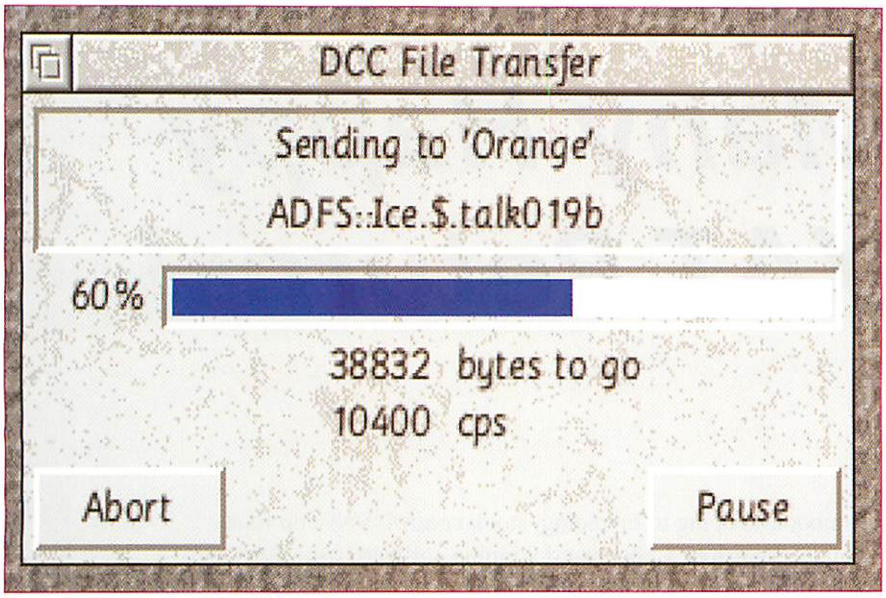
DCC operations

On occasion, you'll want to interact with another user without having to go through the IRC network. DCC (Direct Client to Client) is the way you can accomplish this. When in use, a connection will be made directly between the two computers involved. iXRC supports two DCC operations – chat and transfer.

Chat is basically the same as a private conversation, but is faster because of the direct link between your



The iXRC main window and subwindows



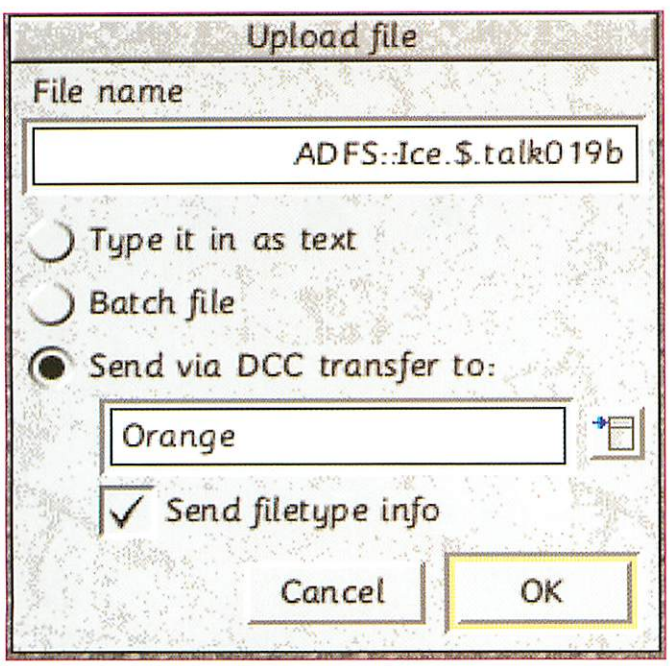
A transfer in progress – almost done...

machines. The transfer facility allows you to send files to another user, which is especially useful when you're connected to the Internet via a modem as it's usually much faster than using FTP or the WWW.

These transfers are easy to start up, simply dragging a file to a private conversation with another user will bring up a dialogue box. This also offers you the chance to paste the file into the conversation instead.

Natty features

iXRC highlights any text that looks like a URL in green, and double-clicking on one of these highlighted areas will launch it – this is a great time-saver and it helps cure transcription errors. All the common applications will receive URLs like this, including *ArcWeb*, *Messenger* and *FreeTerm*.



Sending another user a file

While using IRC, you'll frequently find you want to talk directly to another user, usually because you've strayed off talking about some topic that's not of general interest to the rest of the channel. One nice feature is that as soon as you start privately talking to another user (with /msg), a window is opened just for conversing with them which behaves like a normal channel.

Another unique feature is the ability to speak text as it appears. You can activate speech for each channel, private conversations and server messages individually. You can assign different voices to different nicknames, so each of your friends can have a voice of their own. This is exceptionally useful when you're not paying full attention to a window, especially if it's dead most of the time.

Some of the voices are less understandable than others, but a voice editor is included so you can always create more. There's also a phonetic editor which allows you to try and improve on any words it doesn't pronounce correctly.

iXRC has a built-in upgrader program. So as new versions become available, which you'll be told about by the MOTD (message of the day), you can download them from the Quadworks WWW site, then drag the upgrade file from the archive to iXRC on the iconbar. It then performs the upgrade and informs you that you need to restart it in order to begin using the new version. I used this scheme when upgrading to version 1.12 and it worked flawlessly.

Documentation

No printed manual is supplied, instead there is an application containing the documentation. Running this will start your browser and display the index page. Quadworks have assumed that all users will have a Web browser, which is fair since the program is Internet based and with ArcWeb or *Webster* freely available there can't be many people without one or the other.

If you've used IRC before, you'll find you can use iXRC without ever needing to refer to the manual anyway. On the other hand, if you're a newbie you'll find the manual invaluable as it quickly takes you through the basics of IRC itself without blinding you with technical jargon.

One of the advantages of a program like iXRC is that you're liable to bump into the authors while using it. Even if they're not around, there's usually someone on #acorn who knows it well enough to give you a bit of help if you're floundering.

Conclusions

I did have the odd niggle with the version I reviewed. One was that there is no way to change the size of font used, I found that the 14pt Homerton takes up too much space on a 14in monitor if you're trying to do other things at the same time.

The only other feature that irritated me was that the computer freezes while DNS lookups occur. This is tolerable though, as the lookups only need to be done when you connect. Quadworks are working on both these problems and hope to release a upgrade shortly to address them. They are also working on two additions – a script language and a user definable toolbar.

All in all, I found this to be a very worthwhile addition to my Internet software. During about a month of using iXRC, it hasn't crashed once and the user interface is well thought out and easy to get to grips with. I'd recommend this to anyone who spends more than the occasional few minutes on IRC – it's great value for money. AU

Product details

Product: iXRC
Supplier: Quadworks
Price: £14.99 (inc p&p, no VAT)
Address: 63 Charlemont Road,
West Bromwich,
West Midlands, B71 3DY
E-mail: sales@quadworks.co.uk
WWW: http://www.quadworks.co.uk/

Making sense out of statistics

Mike Tomkinson demonstrates how statistics can be used in business

Statistics generally have a bad press. Ever since Disraeli coined his memorable phrase about lies – damned lies and statistics – the subject has been seen as a method of using figures to serve a less than reputable purpose. It continues today with Vic Reeves' assertion that 99.8 per cent of all statistics are made up on the spot.

I would agree statistics are often the last refuge of a scoundrel or that they have been hijacked to give a certain validity to some subjects which struggle for academic credence. However, statistics in themselves are obviously neutral. They have no axe to grind, it is merely the use to which we put them and the inferences we choose to draw from them that may be controversial.

In this article I hope to offer some ideas for the use of statistics in business, although the ideas are applicable to other areas and can be readily and easily adapted. The statistics used will be from that part of the subject known as simple statistics. Generally most statistics are simple at heart. The skill comes in applying the right statistic to the right problem and then in correctly interpreting the result.

A tale of tin helmets

Let me start with a probably apocryphal tale, which illustrates quite well the problem of interpreting statistics. The tin helmet (actually it was steel) was not widely available to British troops at the beginning of the First World War. The British army was essentially supposed to be mobile on the battlefield and the use of cavalry and cavalry charges was still considered to be a valid tactic despite the development of the machine gun. As that terrible war degenerated into trench warfare, the tin helmet began to be considered essential and, as a result, they became widely issued.

At this point the people who kept the grisly statistics of death and injury noticed that the number of head injuries appeared to be rising as the helmet became more widely available. A clear case of what a statistician would call positive correlation, as one factor increases so does another. The inference is that the two must therefore be linked and that the linkage was causal, that is, one caused the other. In fact the two factors were linked very closely, and the number of head injuries did rise significantly as helmets were distributed and worn. The statistics proved it – there could be no doubt.

The obvious solution was to recall the helmets. At this point, take a few moments to try to think about the situation and what the statistics were really telling the General Staff. Most people can give hundreds of reasons except the real one. The solution requires a correct interpretation of the statistics and illustrates the dangers and difficulties of both applying them and then drawing a correct causal inference.

Give up? The real answer is that, prior to the introduction of the helmet, anyone hit by shell or shrapnel was dead. Most soldiers did not survive head injuries. Those with helmets might be injured but they were not immediately dead. The helmets were working.

Apply and interpret

If you can remember that salutary tale you won't go far wrong with applying and interpreting statistics. Many people become worried about the mathematical element, the numbers and the formula, but those are generally quite easy to deal with, particularly when using a computer. Indeed it is perfectly possible to allow the computer to work out most statistics and not actually worry about the formula at all.

Just one more word of warning – people might say they don't trust computers but they tend to believe quite blindly anything a computer produces and any figures produced on computer must be right, mustn't they?

Getting started

Most computer users already have all they need in order to get started with statistics – there is usually access to a spreadsheet package somewhere on their system. Acorn users tend to be well off in this respect with some excellent spreadsheets available: *Schema 2*, *Eureka 3* and *Pipedream 4* to name just a few. Each has a wide range of statistical functions, although they may be like the mass of buttons at the top of most calculators – you don't know what they're for, but it's reassuring to have them just in case.

Usually I would recommend the use of a general purpose package like a spreadsheet, but in the use of statistics I would recommend another option. Serious Statistical Software have been producing and refining their range of dedicated statistical software for a number of years. It comes in three variants; *1st*, *1stJr* and *1stL*. As the Jr and L indicate, these are subsets of the full range of statistical techniques available on the full 1st package.

Most users will not need the full range and it therefore makes sense to explore the possibilities of the smaller packages. You can always trade up at a later date if you find your version does not have a statistic you require.

Be methodical

Most businesses acquire, either by design or accident, large amounts of data. Statistics can be used as a mining tool to extract valuable information from this data with relatively little effort. They can be used to make sense of what may appear to be a mass of unrelated figures. This is the strength of statistics, but as I have already said, it can also be a weakness if you are not methodical and careful in how you interpret them.

At this point I ought to make it clear that this is an article about statistics in business in which I will use 1st and not a review of the software. That would be unfair to 1st and equally I am not saying that you cannot use a spreadsheet – simply that, in my opinion, you might not be best served by using a general purpose package for what is a fairly specialised task.

Nor, unfortunately, is it a tutorial on statistics or 1st. That would require a series of articles. There are a large number of books that can be bought and I will recommend

one. 1st itself comes with a printed installation guide and an extensive on-line manual.

The example I intend to use is based on an exercise in the excellent book *Quantitative Techniques* by T Lucey (5th Edition). I can't recommend this book too highly, it has the best section I have seen on critical path analysis in a modern text book.

Problem solving

The problem for 1st is a relatively simple one: The managers of a company with 10 plants producing components have observed and recorded a pattern of expenditure on inspection and defective parts delivered to customers.

This leads them to wonder how strong the relationship is between inspection and faulty items delivered, and to what extent they can then predict the number of faulty parts from a knowledge of the expenditure on inspection.

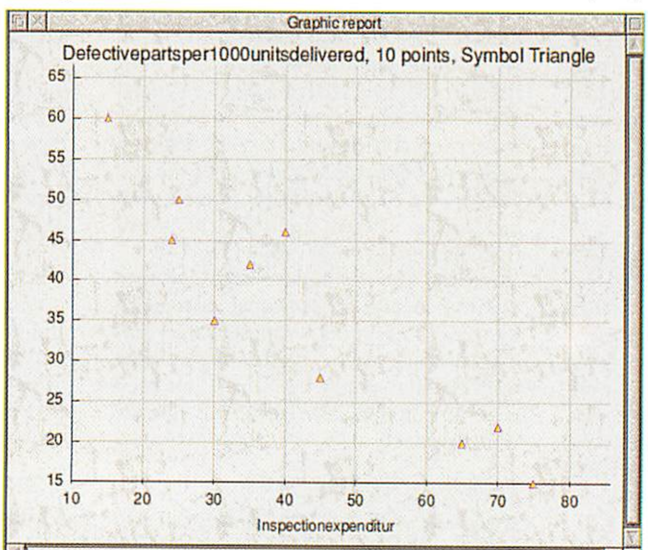
This is a fairly common problem of its type. You might reasonably expect that the more money spent on inspection, the fewer defective parts would be delivered to customers. However, that is an assumption which can be partly tested by graphing the data.

Graphing the data

The usual conventions of graphing apply – with the X axis, or horizontal, being the independent or causing value – in this case expenditure. The figures can be loaded into 1st in a number of ways, the two most obvious are directly, and via a CSV. Of course, entering them into a spreadsheet first rather negates the use of a dedicated statistical software package, but much data may already be in spreadsheets and the option to import is very useful. I actually saved the data as a CSV from *Tablemate Designer* (see Table I and II) and imported it into 1st by simply dragging it to the 1st icon on the icon bar. Simplicity itself.

Observation number	Inspection expenditure per 1000 units (pence)	Defective parts per 1000 units delivered
1	25	50
2	30	35
3	15	60
4	75	15
5	40	46
6	65	20
7	45	28
8	24	45
9	35	42
10	70	22

Table I



CSV

Observation	nspectionex	Defectivepar
	25.0	50.0
2.0	30.0	35.0
3.0	15.0	60.0
4.0	75.0	15.0
5.0	40.0	46.0
6.0	65.0	20.0
7.0	45.0	28.0
8.0	24.0	45.0
9.0	35.0	42.0
10.0	70.0	22.0

Table II

From this it is possible to produce a scattergraph of the two variables – Inspection and Defective – via the plotting sub-menu. 1st does not pretend to be an all-singing/all-dancing graph drawing package, and this shows when drawing some graphs, although the graphs can be saved as !Draw files and tidied up.

Our graph shows a clear decrease in the number of defective parts delivered as expenditure on inspection increases. In other words there appears to be a fairly strong negative relationship. Note the qualifying terms, as at this stage we do not have enough evidence to be certain. Let us now apply some statistics to these figures.

When one variable is related to another they are said to be correlated. From the scattergraph there appears to be high, but not perfect negative correlation. If it were perfect we would get a nice straight line and many of our later problems would disappear.

There are many measures of correlation but the most well-known is the frighteningly named Product Moment Coefficient of Correlation or *r* for short. This has an equally frightening looking formula but it does illustrate the value of software such as 1st. You do not need to know the formula – the computer and 1st will produce the statistic for you. Basically it is a measure of the strength of linkage between two variables. It (*r*) can range from +1 to -1, or perfect positive correlation to perfect negative correlation respectively. A value of 0 or close to it usually indicates no linear relationship, although there may be others.

Before continuing we need to rank the X or independent variable. In this case using Pearson Product ranking is not strictly necessary, as for instance it would be when using other statistics like the Spearman Rank Correlation Coefficient. Before computers such statistics were tabulated and the custom and practice was to start with the X variable ranked. This is easily achieved by using the **Statistics, Data manipulation, Modify data matrix, Sort matrix** route in 1st. This produces Table III with Inspection Expenditure now ranked lowest to highest.

Produce the statistic

Again, this is equally easy in a spreadsheet but the next part is not. We are now ready to produce the statistic. This is where 1st really scores as you simply follow the menu route **Statistics, Descriptive stats, Correlation matrix** and highlight the Inspection and Defective variables, click OK and it gives the answer of -0.929365 or more sensibly -0.93. This is indicative of a strong negative correlation.

Great care is required in the application of this and other correlation statistics – they

CSV

Observationnu	Inspectionexp	Defectiveparts
	15.0	60.0
8.0	24.0	45.0
1.0	25.0	50.0
2.0	30.0	35.0
9.0	35.0	42.0
5.0	40.0	46.0
7.0	45.0	28.0
6.0	65.0	20.0
10.0	70.0	22.0
4.0	75.0	15.0

Table III

are only useful where, as in this case, one variable causes changes to another. There are many examples where a high value of *r* is possible but there is no causal relationship between the two, for example, there might be a high positive correlation between storks nesting in an area and the number of children born but it is not proof of a causal relationship. Correlations can, however, be useful in many cases where there is clearly no causal relationship. It is only when one is hoping to exploit a possible predictive relationship that great care must be taken. As in this case.

At that point you may think we have finished with this example but if you remember in the original problem the managers were asking if they could use the data to ultimately predict the number of faulty parts based upon knowledge of expenditure. I have missed out one step here that would normally be required to test the significance of the *r*. Trust me, in this case it is significant.

Using the results

Having proved the relationship, we now need to use it to our advantage. This is the whole point – statistics *are* useful. Following our example let us suppose that a manager wants to know how many defective parts might be delivered if 50 pence per 1000 units was spent on inspection.

There are a number of ways of tackling the problem and one of the most obvious is to draw a straight line on the scattergraph and interpolate from the graph. Unfortunately the line is not an obvious fit and, while it is possible to guess, it is not likely to then produce more than a 'guesstimate'. There has to be a better way, and once again 1st comes to the rescue. We don't need to worry too much about the theory except to say that we will perform a regression analysis using the least squares method of linear regression.

I know it sounds more than a little off-putting and would agree if you only had a spreadsheet or calculator to help you. Basically we'll find the line of best-fit on the graph. There are, once again, some fairly daunting looking formulae as we would have to solve at least two simultaneous equations. 1st does all this for us.

The menu route **Statistics, Regression** opens a window asking us to indicate the dependent and independent variables. These are Defective parts and Income expenditure respectively. At various points, 1st's interactive manual appears to guide us through the process offering helpful advice and dire warnings such as this:

'regression analysis is perhaps the most powerful tool in the statistician's armoury. As such it can also be a dangerous implement in the hands of the unskilled or unwary.'

Consider us warned. Clicking on OK produces a report containing the figures we need all fully computed for us. This report is very comprehensive and actually contains much important information, some of which is not asked, for example, *r squared* or the Coefficient of determination. I mention this to show you how helpful 1st is – it appears to anticipate every statistical need. The program really appealed to me the more I used it.

The two figures we actually require are the 63.97 (rounded to two decimal places) and the -0.65. With these we can use the formula y=63.97 -0.65x and substitute 50 for x to give us y=63.97 -0.65(50) = 31.47.

Interpreting this in terms of the original problem means that the manager could reasonably conclude that, on average, 31.47 defects per 1000 parts would be delivered if 50 pence per 1000 was spent on inspection.

Where most people now go wrong is to apply this like a immutable law to all cases when it clearly may not apply outside the highest and lowest recorded values in the original data, 75 and 15 respectively. The same conditions may not apply beyond these figures. If it is used carefully it forms a potentially useful predictor based on the original data.

There are any number of other statistics that can be applied to the data. This can be no more than an overview. Certainly 1st simplifies the approach and the production of the statistics but what it and no other program can do is stop you, despite dire warnings, applying the wrong statistic or mis-interpreting the right statistic.

However, if you approach the data with care and read the warnings, you can produce information from data that will assist business decision making for the better and therefore increase profits.

This has obviously been a fairly brief canter through statistics but hopefully it has illustrated their usefulness and whetted your appetite to pursue the subject further. Once again I recommend the book Quantitative Techniques. The bottom line on 1st is that I found it invaluable in the production of this article and it will be stopping on my hard disc. It *is* a serious piece of statistical software. AU

Report

```
            R-Sq = 0.86372  Adjusted R-Sq = 0.846685

                  Simple Linear Regression

        for Defectivepartsper1000unitsdelivered,
                  Mean 36.3, SD 14.7049

Variable  Coefficient Std Error    't'   Probability  Lower  &  Upper 95%
                                          that t=0    Conf. Intvls. for Coef.

   CONST  63.9646      4.29065  14.908  Below 1E-6  54.0704      73.8588
Inpectionexpenditureper1000units(pence)
          -0.652467    0.0916312  -7.121  9.99439E-5  -0.863768   -0.441165

 Resid. Std. Dev.   = 5.75777 with 8 D.F.  't' 95% crit.= 2.306
 Resid. Sum of Sqs. = 265.215
```

Products details

Product:	1st, 1stJr and 1stL
Price:	Single user prices range from £50 – £164 (educational) and from £70 - £205 (standard). Site licence prices available on request
Supplier:	Serious Statistical Software
Address:	Lynwood, Bentley Heath Lane, Willaston, South Wirral, L64 1SD
Tel:	0151-327 4268
E-mail:	sales@serious-stats.co.uk
Book:	Quantitative Techniques by T Lucey (5th Edition) – ISBN 1-85805-183-5
Price:	£12.95.
Supplier:	Letts Educational Publications
Tel:	0181-740 2266

Success stories

David Matthewman and **Jill Regan** visit Simtec Electronics, a key company in the Acorn market

Simtec, according to Gareth Simpson, is a 'hobby gone wrong'. At university, he used to upgrade his Archimedes using self-built upgrades, which he found he could do at a much lower cost than buying them from third-parties. Students being students, anyone who could upgrade a computer and leave change for text books – or a pint – was much in demand. It fast became clear that there were excellent opportunities in this business; Gareth abandoned his PhD and Simtec was born.

The old and the new

Simtec have always dealt with upgrades across the range of Acorn's RISC machines. They're as happy to supply an 8Mb memory upgrade for an A310 as a multi-processor board for a Risc PC, and the design for both is just as ingenious.

Nor do Simtec rest on their laurels once they have a design. While we were there, Gareth was sending a new design of 4Mb upgrade boards for the A3000 down the production line. It's not a new product, and there was nothing very wrong with the old design, but Gareth had spotted a few ways to improve the upgrade and went to the effort to implement them. Never mind the fact that the A3000 hasn't been produced for six years – a lot of people still have them, and the upgrades still sell well.

Simtec's devotion to supporting older machines can pay off in other unexpected areas too. When Acorn designed the A3020, Zip chips were used to upgrade the memory in them. This was very state-of-the-art at the time, but no one makes Zip chips any more. Upgrading an A3020 suddenly became very expensive, if not impossible.

Rather than simply abandon memory upgrades for these machines, Simtec designed a converter board. This had standard memory chips on the board, but a row of Zip-style pins across the bottom. Now existing cheap chips could be used in Zip sockets; Simtec's Zip conversions have almost identical tolerances to true Zip chips. In fact they're often better because the pins are stronger.

As you might expect, Acorn weren't the only company to use Zip chips in designs. Simtec find their Zip-style chips in demand across the world. In many cases, it would be prohibitively expensive for a company to re-design circuit boards to use, say, SIMMs because the new design would have to go through a lengthy approval process. Or perhaps the circuit board is very large or complex, and the Zip chip just a minor part of the design. Simtec's pseudo-Zip chips are exactly what such a company would need, at a very competitive price.

Simtec on show

Acorn shows tend to be full of stands where enthusiasm is more in evidence than presentation. This is on the whole a good thing, and far better than the meaningless PR gimmicks that make other computer shows a confusing and unsatisfying experience.

Simtec certainly have the enthusiasm and the 'Acorn family' mentality. More than one exhibitor has been grateful for Gareth's expertise. He has a knack of divining the problem with a stricken computer – on one occasion he brought a dead machine back to life by judicious use of a paper clip.

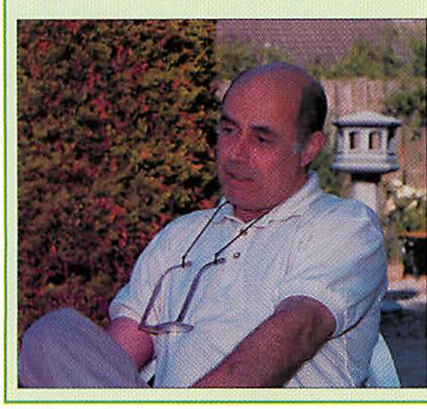
Simtec stands are also very different.

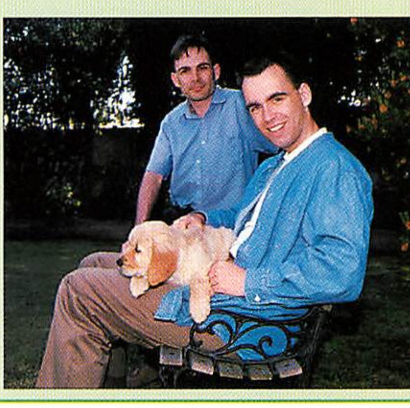
Meet the Simpsons

Simtec is officially just Gavin and Gareth Simpson (the subject of last issue's Regan Files).

However their father Graeme and mother Glenys are always on hand as unofficial advisors, should they be needed. Glenys is an auditor in the Civil Service. Graeme 'got dragged into this kicking and screaming': He started life in hotel management before moving into wholesale and delivery of frozen foods. After being self-employed for over 30 years, he knows a lot about running his own business.

The Simpsons usually treat shows as a family event, so if you have visited the Simtec stand you've probably run into all four. Whether Honey the golden retriever puppy will be putting in an appearance at Acorn World is less certain.







Success stories

Whether it's SIMM modules spread out into a fan, machine circuit boards in glass cases or the memorable 'Free Risc PC with 256Mb of memory offer' of the 1994 *Acorn User* show, Simtec's stands are always individual. The company has an eye for a well-laid-out display.

'There's only so much you can do with memory upgrades,' admits Gavin. 'You can't have your Computer Concepts-style theatre demonstrating a package.'

Gareth adds frankly, 'We're trying to advertise a very boring product that should work first time and is hidden inside so you're not even conscious of using it. We've got a Replay film of the production line which I did when I had 20 minutes to spare down in London at a show. That can draw people onto the stand.'

Having got people to the stand, Simtec rarely sell direct from it, preferring to offer advice, show people what they do, and... well... chat.

This customer first philosophy underpins the whole company. Simtec would rather that people bought the *right* product for themselves, regardless of whether or not it's one of Simtec's. They now sell very little direct, encouraging customers to buy from their local dealer who can provide local support. This wasn't always the case. 'Originally we went round the dealers and they weren't interested – they said 'Who are you? Go away!' So we went direct to the IT Centres and were very successful.

'With time we have built up a good relationship with a core set of dealers who give the expected levels of support. They know what they're talking about and they keep customers happy. A happy customer will come back.'

Multi-processors

One of the most exciting Simtec projects of recent years was the Hydra multi-processor card for the Risc PC. At the time there were great hopes for this card – the prospect of a superpowered Risc PC with five ARM chips running in parallel caught the market's imagination. Companies were said to be adapting their software to work with the Hydra; there was a rumour of a 3D graphics engine designed especially for it.

Somehow, it failed to happen. Gareth explains why: 'We found out, quite interestingly, that writing multi-threaded programs is not easy if you want to do it properly, especially as the operating system you're trying to thread on is non-threadable. It *can* be done. Mark Brinnacombe managed to write a multi-threaded Desktop program, with each window using a separate multi-threaded thread.

'And it worked very well, except when he came to interface it to the WIMP libraries and they were doing unofficial things. We'd have to lock various functions, but the WIMP libraries would use them unofficially and occasionally it would crash. It was very responsive without the time lag problems you get now; it makes thing like Web fetches brilliant because you just launch them up as background threads.

'That's what makes things like Window NT work quite nicely – with anything that's multithreaded you don't get the machine locking up when you try to redraw the screen or print. That's what we'd like to see. It's the way it's done in the real world and we'd like Acorn to take a snapshot of the real world, take what's good, and keep the good bit Acorn has which is a nice clean architecture.

Unfortunately the arrival of Digital's StrongARM caused Acorn to lose interest in modifying RISC OS to support multi-processing so we have now stopped development of the RISC OS version of Hydra.'

Education

There's a terrible snobbery about the education market among Acorn users. If this article were in the education section of the magazine it's certain that it would be passed over by many readers as a waste of space. Simtec doesn't share this snobbery.

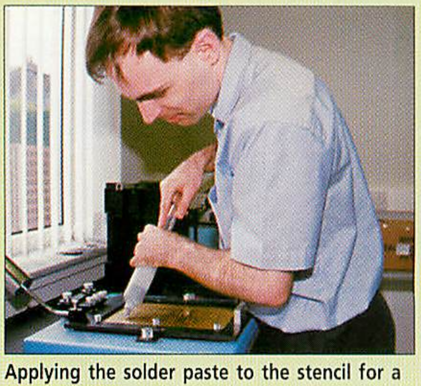
'We listen to all our customers, but especially to education,' admits Gavin. 'They are the biggest customer, and often a bit more stringent in their needs.'

Stages of manufacture

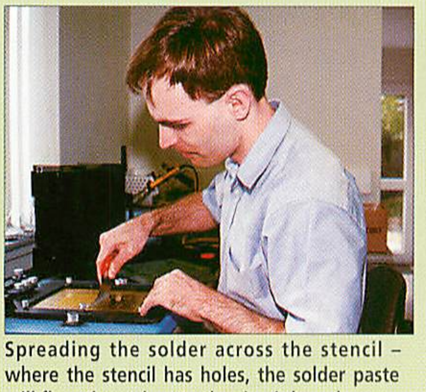
Part of Simtec's success can be attributed to the well-equipped production line. Gone are the days when the oven in the kitchen was used to bake circuit boards. In fact, even the small oven bought to replace the one in the kitchen – called *Alfred* because it kept burning things – has been replaced by a long Quad 2CR oven called *The Cookie Monster*.

Circuit boards take several minutes to pass slowly through this, and the temperature within can be precisely controlled. It's even possible to melt the solder on one side of the board while keeping the other side solid, greatly increasing the range of circuit designs that can be manufactured.

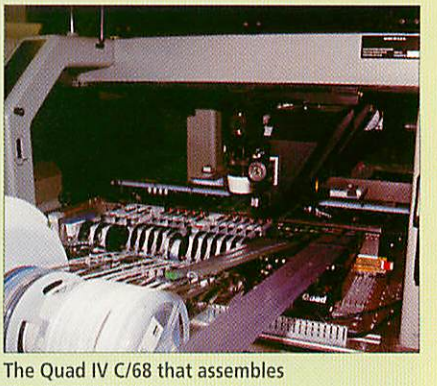
The Litesold Soldermatic solder batch and ChlorChemicals Cleanline 2 ultrasonic cleaner are two other early purchases still in



Applying the solder paste to the stencil for a set of A3000 memory upgrades



Spreading the solder across the stencil – where the stencil has holes, the solder paste will flow through onto the circuit board



The Quad IV C/68 that assembles the circuit boards

'It's a big selling point for Acorn,' Graeme points out. *'RISC OS: Tested to destruction by 250,000 school kids every day, and it doesn't fall over.* If Acorn loses that market they'll lose their best selling point.'

A while ago Acorn stopped supplying RISC OS 3 upgrades. You might not think there was any demand for these, but there are still a lot of RISC OS 2s around – Simtec recently upgraded Lincoln LEA with 1000 sets of RISC OS 3. At the time, Simtec enquired about buying the licence to produce RISC OS 3 upgrades themselves because they knew the demand was there, but Acorn wanted a very high fee for the licence, making the idea completely uneconomical.

As it turned out, both Simtec and Xemplar put in enough orders to convince Acorn to manufacture more upgrades, but it's an example of how easily Acorn could lose their biggest market. A school that has Acorns – even relatively old Acorns – will want to keep them. They'll have invested a lot of time and money in them; it doesn't matter so much if the machines are slow so long as they run the software that a particular course has been built around over the years.

However, if they're being asked to effectively junk their older machines and buy Risc PCs and A7000s to replace them, they won't. They'll buy multimedia PCs instead because they're a lot cheaper for what you get. So, by supplying upgrades to ancient machines in education, Simtec is helping to keep the Acorn market strong.

New premises

Simtec have recently acquired new premises in the shape of the house next door. The company now effectively occupies an entire cul de sac in Tarleton. Graeme and Glenys live in the main house, Gareth lives next door and Gavin lives just down the road. The move has freed the kitchen from serving as the surface mount preparation area, and Gareth and Gavin now have their own offices.

'It is nice to work in an environment like this,' affirms Graeme. 'You get out of bed, and you're in work. The trouble is that you're still in work when you go to bed.

'We all moved apart and now we're all back together. We actually had three fabulous years here with no kids. Now I've got a daughter-in-law, a puppy, four cats...' Then he smiles. 'Actually, it's nice that they want to come back.'

Acorn's future

Simtec are concerned that Acorn have a problem. Gareth produces a quote: 'This is from the Acorn Risc Machine family data manual, and it says here: "VLSI Technology has a full system solution to the design of a *cost-effective* small computer." That normally means cheap. The problem is Acorn kit isn't – but it uses cheap components. Where's it going wrong?'

'Our feeling is that Acorn seem to be paying a lot more for the work they're getting done than they should be. The set-top boxes are a case in point; Acorn are paying almost as much as they're selling them for. I mean, these are supposedly based around a sub-$50 chip, with some memory, in a box with a power supply and a few other bits and pieces. Something is going seriously wrong.'

'I think the problem is that if Acorn are having to pay someone to make a finished box, lead times mean that they have got to order in advance, say, an 850Mb drive with an eight-speed CD-ROM. By the time they come to sell the finished product, you can't *buy* 850Mb drives, because the smallest people make is 1.2Mb. So Acorn are selling under-specced machines at expensive prices because they signed the contract three months ago.'

'But it's the way Acorn does it,' sighs Gavin. 'We've done our best to persuade them to just sell basic machines, but Acorn's policy seems to be not to allow dealers to upgrade machines; for a while they stopped supplying the cheaper machines. But a dealer can build up a high-spec Risc PC from a base model much more cheaply than he could buy the equivalent machine ready-made from Acorn.'

'It could all change when all of these licensed designs start coming on-line,' concludes Gareth, keen not to sound too pessimistic. 'When all of these big manufacturers gear up production, RISC OS could dominate the world.' AU

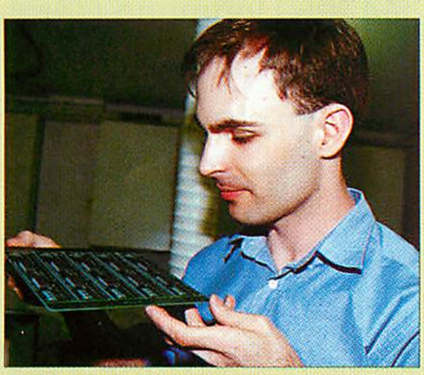
Simtec's details

Address:	Avondale Drive, Tarleton, Preston, Lancs, PR4 6AX
Tel:	01772 812863
E-mail:	info@simtec.demon.co.uk
WWW:	http://www.simtec.demon.co.uk/
Products:	Memory upgrades • IDE interface • ARM 3 upgrades • FPA upgrades • Hydra card
Set up:	1991

use, despite sounding as if they came from a certain inventor on West Wallaby Street.

The centrepiece of the production line is *Hungry Horace*, the Quad IV C/68 circuit board assembly machine. Put simply, you feed in a circuit board, tubes of components and a design, and the machine gives you circuit boards ready for baking. Watching it in action – scanning the board for orientation, selecting the correct tool, using a tiny vacuum nozzle to pick up components and place them in position one by one – is oddly restful.

A by-product of *Hungry Horace's* activities is a stack of empty chip sleeves. These are donated to CDT departments of local schools, as they're ideal girders for building bridges and the like.



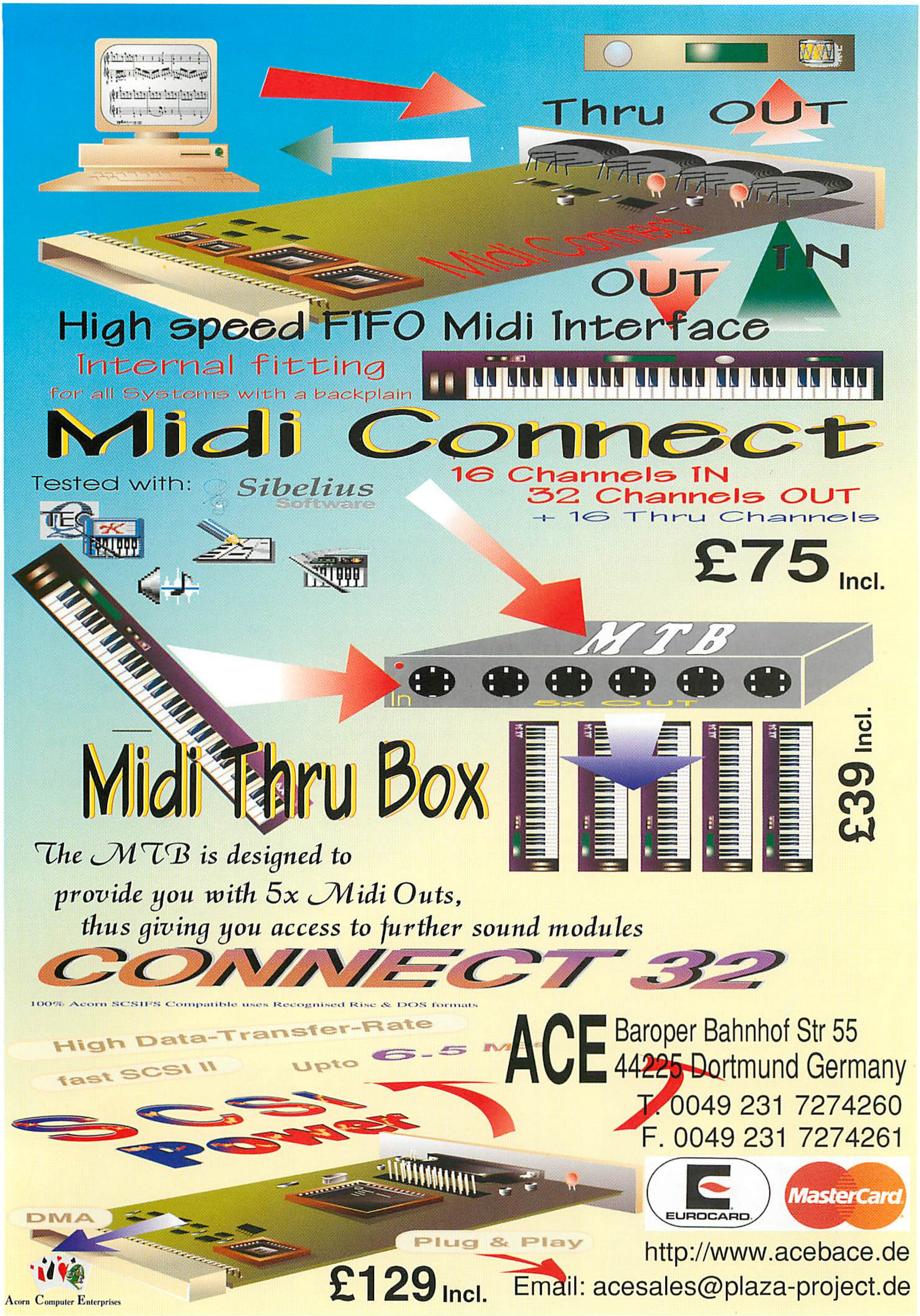
Checking that all the components are correctly positioned



Feeding the circuit board into *The Cookie Monster*



The testing station for upgrades – a lidless A3000 (and A310)


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http://www.acebace.de
Email: acesales@plaza-project.de



Psion's famous five

Mark Taylor puts pen to screen and takes a look at the new Psion Series 5

Psion have, for a long time, been the market leader in palmtop computers, so when this position was put under threat by the new generation of Windows CE palmtops, there was a sneaking suspicion that Psion would have an answer up their sleeves. Their reply is the all new Series 5.

Anyone who tried to access Psion's Web site on the day of the launch will know how eagerly anticipated this launch was. It was at a virtual stand-still – even two days after the launch it was still very slow and this was from a university network!

The S5 is the first machine to use Psion's next generation EPOC32 operating system. EPOC32 is a 32-bit open operating system designed by Psion's sister company, Psion Software, especially for use in portable devices such as palmtops and mobile phones. EPOC32 is designed to run on the ARM family of processors and the S5 is powered by a 18MHz ARM7100 chip.

EPOC32 is not directly compatible with the operating system used in the S3 machines – EPOC16 – which means all the programs currently available for S3 will need updating to run on the S5. However, this should be fairly easy as most programs will require only minor changes to make them compatible.

The S5 is available in two variations with either 4Mb or 8Mb of memory. As with all Psions (except the Sienna) it is upgradeable, but the old SSD system has been dropped in favour of Memory Discs using the CompactFlash standard. The S5 only has one upgrade slot which can accept memory discs of up to 10Mb in capacity.

The machine is powered by two AA batteries which will last up to 35 hours. Psion estimate this to be approximately one month's use. A 3V Lithium backup battery ensures no data is lost if the main power supply runs out.

First impressions

Psion have always been famed for their ingenious case designs and the S5 is no exception. On opening the case, the vastly improved keyboard slides out about an inch – the keys are approximately 80 per cent of full size and typing is much easier than it ever was on the old S3. After some practice, touch-typing is probably possible – although as I can't touch type, I can't say for sure!

The screen rests at a convenient angle on the rear of the case. It is much larger than on the old S3 (640x240 pixels) thus a full A4 page width is visible without scrolling. The screen supports up to 16 shades of grey meaning the graphics on a S5 are far superior to those on the S3.

The screen is touch-sensitive and the S5 is supplied with a 'pen' which provides all the functions of a normal mouse. You do not have to use the pen as your mouse, you can use your fingers, but the screen gets dirty very quickly this way.

The 'pen' is stored in a slot at the rear of the S5 and as long as you return the pen to its slot it should be quite difficult to lose but if you do, Psion will be selling replacements.

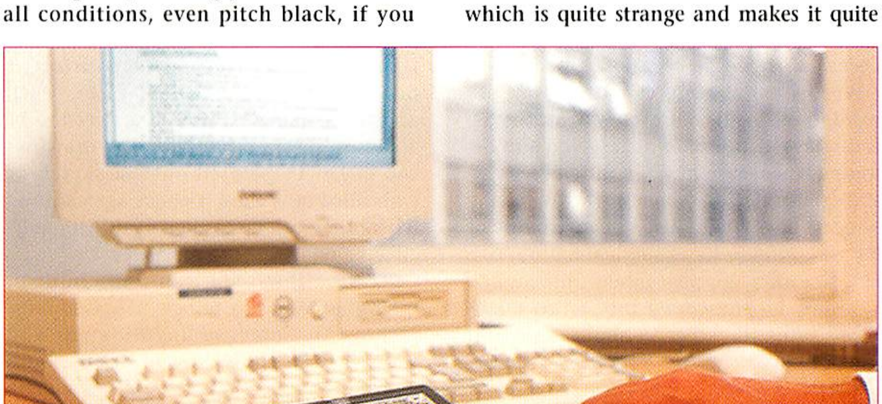
The screen is very clear and can be backlit if required, enabling you to use the S5 in all conditions, even pitch black, if you don't need to see the keys that is. My only niggle with the screen is that it is very reflective which can cause problems in some conditions.

The rear of the case houses the batteries, the fast RS232 serial port (covered by a protective cover), an infra-red transmitter and a loud-speaker. The machine also has three audio-style buttons and a microphone on the outside of the case enabling it to be used as a dictaphone.

Applications

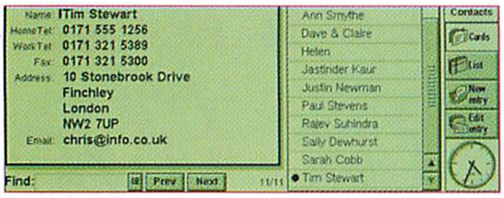
The applications suite on the S5 at first glance looks very similar to that of the S3 with familiar names such as *Word, Sheet, Data, Agenda* and so on, but that is where the similarity ends. Each application has been totally re-written to take advantage of the new features and interface of the S5 and there are also a couple of new applications.

The user interface has been totally redesigned and is now much more similar to that of a WIMP environment, with scroll bars/icons etc. and, in the main, is a delight to use. My only niggle is that the up and down scroll buttons are both located at the bottom of the scroll bar which is quite strange and makes it quite



The Psion Series 5 in action

Psion's *famous five*



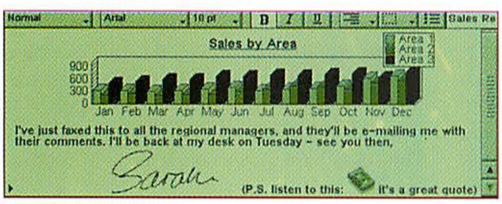
Data's Card View

easy to hit the wrong button when using the 'pen'.

All the applications have at least one tool bar on the right hand side of the screen. This is similar to the status window on the S3 and shows such things as the time and date, the name of the file being edited and also has four buttons giving easy access to important functions in each application.

There are four command buttons on the left hand side of the screen giving access to the menu, cut/copy/paste options, zoom options and the infrared communications menu.

The desktop, called *System*, is now much neater than on the S3 – files are no longer grouped under the program they belong to but are stored in directories as on desktop machines. The S5 supports long file names which makes file management very easy.



Word in full swing

The machine is easily configured using a control panel system similar to the Configure application on any Acorn RISC OS machine.

Word is now a much more complete wordprocessor than it ever was on the S3. It displays 'rich text', which to you and me means it will now display different fonts, sizes and styles. A toolbar at the top of the screen allows you to easily change many of the text options, for example font, font size etc. Graphics, graphs, tables and sounds can now be embedded into word documents using the other S5 applications and can be edited using an OLE-style system.

Sheet's user interface has been redesigned to include a toolbar giving easy access to many functions including font size and style, justification and mathematical functions. Sheet's features are very similar to that on the S3, offering all the core functions of most desktop spreadsheets.

The graphing module has also been improved, mainly due to the enhanced graphics of the S5. The program offers six graph types each with a 3D option. Graphs can be embedded into other applications and the main applications include a link to the spreadsheet.

Data has been vastly improved and now offers both a list and a card view as well as proper searching and sorting. Labels can now be allocated a type, for example, number, text, date etc., which ensures that when sorting on numbers the sort runs from one upwards and doesn't put ten after one as it would if all field were text.

Agenda is probably the least improved of the main applications. The display has been tweaked slightly and other objects such as graphics can be embedded into the Agenda, but other than that it is basically the same as the S3 version. Psion included a very useful month view on the 3c, but this has been dropped on the S5 which is a great shame.

Time and *World* have been merged into one application on the S5 and there are now over 700 cities/towns in the database. Unfortunately my home town of Doncaster is still not included but it is very easy to add your own city if this is the case. Psion still include the same alarm sounds as on the S3 which in my opinion are in need of an overhaul, but you can create your own using Record if you wish.

Calc now offers both scientific and desktop modes and all the buttons are now displayed on the screen allowing you to operate the calculator via the 'pen'.

Sketch is a new application that allows you to produce simple drawings on the S5 using the 'pen' to draw on the touch-sensitive screen. It offers several different drawing tools including a spray can, pencil and fixed shapes as well as a selection of about 50 pieces of clip art. The drawings can either be printed out via Sketch or embedded into Word, Data or Agenda from where they can be easily edited by double-clicking on them with the 'pen'.

Record allows you to use the built-in microphone to create new alarm sounds, record voice notes or anything else you want. The S5 allows you to record about four minutes per Mb making it much more efficient that the recording system on the old S3. As I have already said, the S5 has three audio buttons on the outside of the case allowing the machine to be used as a dictaphone without it.

The S5 also includes a spellchecker/thesaurus, an OPL compiler/editor, a comms package and *Bombs* (a minesweeper clone) for those boring moments.

Communicating with the outside world

The S5 is supplied with *PsiWin 2* which allows you to link the machine to any PC running Windows 95 or NT4. The software is very well designed and allows you to synchronise files with other Windows applications. This means, in simple terms, that files will look exactly the same in Windows as they do on the S5. Files can be taken very easily in both directions. PsiWin can also be configured to automatically backup your S5's files and applications whenever you link the machine to a PC.

The machine can also, by purchasing an optional modem, be used to send faxes and e-mails and surf the Web. The software for these functions has not yet been released but will be downloadable free of charge from Psion's Web site as and when they become available.

Overall

The Series 5 is a superb machine. Every aspect of the Series 3 has been looked at and improved leaving very little to complain about. The machine costs £499 inc VAT for the 8Mb model and £429 for the 4Mb model – these prices include the PC link making the machine excellent value for money.

The S5 is very easy-to-use but if you do have any problems, both the in-built help facility and the manual are excellent references.

Psion say the differences between the S3 and the S5 are so great that they will continue to sell the 3c. However, unless you can't afford the S5 I can't really see any real reason to buy a 3c over the S5 apart from perhaps software compatibility.

My only real niggle is that there is unlikely to be any Acorn link in the near future which means unless you have a PC card running Windows 95, you can't transfer data between the S5 and an Acorn. Hopefully (grovel, grovel) Xemplar will decide to adopt the S5 as the next Pocket Book which should mean an Acorn link would be developed.

Product details

Product :	Series 5
Supplier :	Psion plc
Price :	£499 (8Mb Version), £429 (4Mb Version).
Address :	1 Red Place, London, W1Y 3RE
Tel :	0990 134224
Fax :	0990 561046
WWW :	http://www.psion.com/

Acorn World 97

See the new Risc PC 2

Acorn are set to reveal their eagerly awaited Risc PC 2 at this year's Acorn World exhibition at Wembley, (October 30 - November 1), London, UK. The first public showing will also be accompanied by the Acorn Technology Showcase Cinema, where Acorn's latest and next generation technology will be revealed on the big screen to show attendees.



Hot on the heels of the recent successful event in Wakefield, Acorn World 1997 is supported by *The Guardian* newspaper and over a hundred Acorn exhibitors including Beebug, Pineapple Software, Castle Technology, DeskTop Projects and Clare's Micro Suppliers.

Also at the show will be a fully operational network of Network Computers (NCs). These ground-breaking designs are making Acorn's name recognised around the world through partnerships with companies such as Oracle Corporation's Network Computer Inc, Funai Electric, IDEA, Mitsubishi Net Products, Olivetti, Proton, RCA/Thomson, Semi-Tech Corporation (AKAI), Uniden America Corporation, Wongs Electronics Co. Limited and Zenith.

First showing of Acorn's LanTV outside the US

There will also be the first chance for the UK public to see Acorn's recently launched LanTV, a server and hardware solution that delivers video on demand to low-cost TVs via enterprise networks.

This year's show returns to its traditional venue and is being organised by Acorn after previous organisers EPS HOYS Ltd were unable to handle the business due to an ongoing dispute with Wembley Stadium Ltd over another show.

Philip Lowery MD of EPS HOYS Ltd said, 'To ensure that this dispute has no effect on Acorn World which is also staged at Wembley, we have decided that the best course of action is to hand over the organisation of the show to Acorn, although obviously we will actively be involved in helping this transition go as smoothly as possible.'

Kerri Davies, Product Marketing Manager, Acorn Group plc, comments, 'We have nearly 60 exhibitors confirmed already for what promises to the best Acorn World ever. I am particularly pleased that we can return to Wembley — the show's spiritual home. We are planning important new product introductions and will be promoting new products to the many Acorn enthusiasts who attend the show. We'll also be supporting our dealers with attractive incentives to encourage visitors to purchase at the event.'



For further information please contact: Kdavies@acorn.com 01223 725267.

Last year's visitors

The main areas of interest for last year's visitors to Acorn World were:

Education 45.5% Home use 65.3% Business Use 31% Publishing 20.5% Games 17.7%

Last year's show, organised by EPS HOYS Ltd, saw over £2 million being spent by visitors over the three days in what many described as the best Acorn World ever.

The introduction of an Xemplar sponsored education day on the Friday last year was very successful and is being developed further this year with a full education orientated seminar programme being put together.



Exciting new Acornsoft titles

Acorn have returned to the software market with an exciting range of Acornsoft titles including: RISC OS 3.7 upgrade; Multitasking Replay; Java, and a new tables & frames browser (name still to be announced).

Commercially available to Acorn users for the first time, this browser will cope with the latest Internet technology, eliminating no-go areas of the WorldWide Web for all Acorn users. The browser will be launched at Acorn World 1997 and will be available for sale from the Acorn dealers attending the show. In response to user demand, the company are working towards having many well-known games titles available on the Acorn platform.

The Chris and Peter show

Presentations in the Theatre from Peter Bondar (now Vice President, Engineering) and Chris Cox will continue to be a major feature of the event.

Peter will detail the latest technical developments, while Chris will cover the latest range of hardware and software products.

Blowing away the cobwebs



Simon Kiff, Acorn User's Webmaster, begins a new series on creating and maintaining a Web site

In a previous series in *Acorn User*, David Matthewman addressed the issue of writing HTML – the language of Web pages. He explained many of the tags and their syntax. In this series I hope to help you put some of this knowledge into use, by explaining from my experience how to create and maintain a Web site.

Getting started

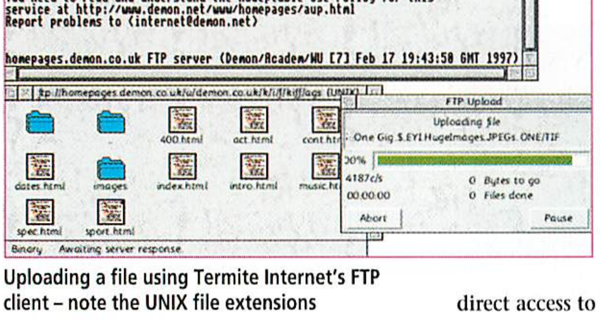
When people begin setting up a Web site, they generally know what the subject of the material will be. The Internet is strewn with pages covering topics from quiche cookery to anti-matter, and only you know what you want to make the subject of your contribution to cyber-space.

Generally if it is something you find interesting and have a genuine knowledge about, your information will prove entertaining and fascinating for somebody out there, probably more so than you thought possible. However, the way in which you present this information is critical in keeping people coming back and wanting to know more.

Before you can make your HTML available to the world-wide Internet audience, you need to have some *Web space* in which to put the files. Web space is simply space on the hard disc of a computer permanently connected to the Internet – a server. Such disc space is offered free by many service providers such as Demon Internet and Argonet. If your service provider does not offer free space, you will need to rent some from a company such as Demon or Oaktree.

Web space is not cheap, so if you can get some free then it is very much worth your while. Normally you only get a few megabytes of free Web space. However, this is more than most Web sites will require because they consist mainly of HTML files (which are just text files and equally small) plus some JPEG and GIF image files – which are both compressed.

Commercial Web sites may be much larger – perhaps 25Mb, but they have a business budget behind them. For your site you will probably find that 1Mb is more than adequate. If you use the Internet regularly, you will have found that most serious commercial Web sites have short URLs such as *http://www.acorn.com* or *http://www.hotmail.com*. These are registered domain names, and they can cost as much as £200 per year – although this does include 25Mb of Web space. This investment is only really an option for serious commercial Web sites, and you will note that few enthusiast pages have such short URLs.



Uploading a file using Termite Internet's FTP client – note the UNIX file extensions

Accessing your Web space

The next problem you face is getting your HTML into this Web space. The most common way is to get direct access to the space via FTP (file transfer protocol). Most Internet access packages for RISC OS have an FTP 'client' as standard. Both ANT and Termite do and, from the freeware setup, FreeFTP does the job very well.

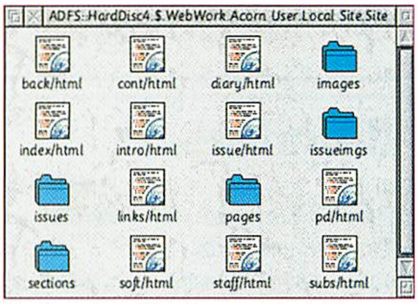
The commercial clients make your directory on the server look like a directory on your hard disc, except that when you drag a file to the window it takes significantly longer to appear there, and involves considerable effort from your modem.

In all other respects you can treat the other server as an ordinary directory – you can move files around, create sub-directories, rename and delete files, all via drag and drop. There is, however, one problem facing RISC OS users, and that is the fact that most servers are UNIX based. This means that, like DOS, files must have a file extension such as .gif for GIF files. RISC OS has no provision for file extension but luckily the FTP client authors have come to our aid.

The solution is to have a file called *image/gif* on your hard disc, and when uploaded the client automatically renames it as *image.gif*. It is important to have the correct addresses for images in your HTML, so for example if you have an image called *ball/gif* in a directory called *images* your HTML would read:

```
<img src="images/ball.gif" height=10
width=10 alt="*">
```

This means that when you upload the HTML file and the images directory containing the image ball/gif, all the links will work and your page will render in all its glory first time. There is nothing more tedious than uploading tens of HTML files to find that when you try and load the site with your browser, there are lots of gaps where your carefully prepared images



The Acorn User Website on my hard drive

should be.

You then discover you forgot to add .gif or .jpg to the filenames in the HTML. One problem the use of / separated extensions throws up is that you have effectively had your filename length reduced to six characters. RISC OS allows 10 characters in filenames, but four of them are being used up with the /gif and five for HTML files which can have the extension /html or /htm.

This makes the 'meaningful' filename just a distant memory, unless you use a system such as X-files which allows long filenames under RISC OS, and can solve the file extension problem. I recommend using the /htm extension, and I shall explain why later.

Once the files have been uploaded they should work immediately, and your provider or Web space manager will tell you the address on which the files can be accessed via the Web. Demon customers upload files to homepages.demon.co.uk, with the user set to their domain name, and the password being their Demon account login password. However, this is not where the site will be accessible on the World Wide Web. To view them on the Web, the URL is http://www.<domain>.demon.co.uk where <domain> is your Demon domain name.

Keeping a local mirror

One of the most important things a Web master can do to make his/her life easier is keep a copy of the Web site on hard disc. This means that one can browse the site without needing to go online, and modify files to see how they look. Always remember to call the main index for the whole site index.htm or index.html because Web servers will default to this address if they get a / terminated URL. For example, if you enter the URL http://www.kiff.demon.co.uk/ the Web server will send the file http://www.kiff.demon.co.uk/index.htm

If you do not have this file in place, the server may send a directory listing instead, which means people will be able to see the contents of the entire directory, including anything you may not have wanted them to see.

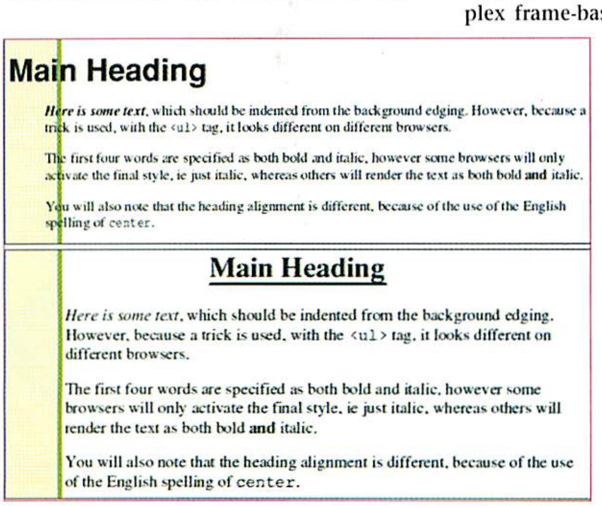
Once you are happy with the site, you can just drag and drop the files you have changed into the server's directory via FTP. If you are maintaining a big Web site, you may wish to have a modified directory where you keep files which you have updated, and which you can upload later. Otherwise you may find yourself forgetting which files you had updated, and the online Web site will become a messy mixture of old and new.

A good Web site

I have now explained the basics of getting your Web site online and available to the world, but if the Web site is badly written, and badly designed, you cannot be expected to get many visitors! What makes a good Web site is as open to debate as what makes a good book, but there are certain things which are universally accepted as good practice, and give the site a more professional look.

The first is how you write your HTML. There are standards on writing HTML, but in general the most important thing is to write tidy, consistent code. Decide which standards you are to follow. Microsoft Internet Explorer and Netscape Navigator support many tags which Acorn browsers will not. For example, you will have found that many Web sites are now using frames and tables, support for which is only just arriving on the Acorn platform. If you are designing a site, you need to think who your target audience will be.

If they will be Acorn users, making a complex frame-based site will be of no use to them. If however, you are designing a site for a multi-million pound corporation with an international market an all-bells-and-whistles site may be appropriate. The decision is ultimately yours, but if you are using frames, then make sure you provide an alternative site using the <noframes> tag (as explained in Acorn User's series on HTML).



This diagram illustrates the difference between some browsers rendering the same HTML

Nothing is more infuriating than a site which displays the message "This site uses frames which your browser does not support. Please upgrade to the latest version of Netscape Navigator to view the site". The whole point of the Internet is that the information is accessible to everyone, and the authors of these sites are short-sighted and are losing out on some of their audience.

The problem of different people using different browsers is one you must address. All browsers have eccentricities and tend to render some things somewhat differently. Some browsers even interpret tags differently. You only need to read some of the arguments on the browser mailing lists to see what I mean. For example, Doggysoft's Web site browser accepts the word "centre" as both centre or center, whereas most other browsers only accept it with the American spelling.

So when Doggysoft users viewed their HTML on another browser, they discovered all their centering had been lost. What you have to remember when writing HTML is that it will always look different, so lining text up manually and other such tricks may work on your browser, but they may look awful on anything else.

The best solution to this problem is to test the HTML on as many browsers as possible. If you have a PC card, you can just drop the local mirror of your site into your PC partition, boot up windows, and test it out with Netscape and Internet Explorer by using the 'open file' option. Do not expect the site to look identical, but provided it still looks good, then it is fine to use.

The first time you check it, you will probably find several problems you have to correct, and these tend to be alignment problems. This is where the point about using /htm as an extension comes in. You can only put your HTML into the PC partition with a three letter file extension, if your files are all suffixed /html, then the partition will not accept the files. The only problem with this is that some servers will not default to an index.htm file, but expect a four letter file extension. Unfortunately, you will often only discover this the first time you upload the site.

Another problem that loading your HTML into a PC may reveal concerns. If you are using GIF files or JPEGs with 256 colours, the chances are that the 256 colours will be those of the RISC OS palette. The Windows palette is significantly different, and trying to display an image from RISC OS in a 256 colour windows mode may result in some horrible results.

People are hardly likely to be very impressed if they load your site to find all the colours crashing horribly with funny stripes across the background. The solution to this problem will be discussed in a future issue, but really the best advice is to check everything in every way you can, before unleashing it on the world. AU



Left: the JPEG viewed in RISC OS. Right: the same in Windows

RESOURCE 11

The eleventh RESOURCE Conference and Exhibition takes place on Friday 21 November at the Exhibition Centre, Doncaster.

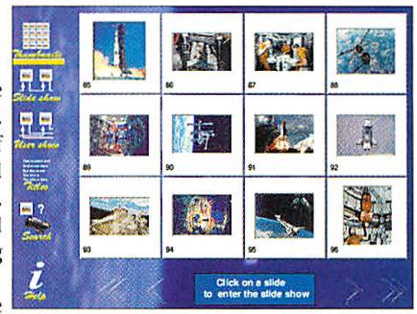
All the top names from the Acorn world will be present for what is probably the largest education technology show after BETT.

Aimed mainly at teachers, including Special Needs teachers, RESOURCE is half exhibition and half conference. One of the speakers this year is Niel McLean from SCAA.

RESOURCE as a company will be well known to Acorn users as the company that brought us such classics as *Much Ado at Rainbows End* and *Albert's House*.

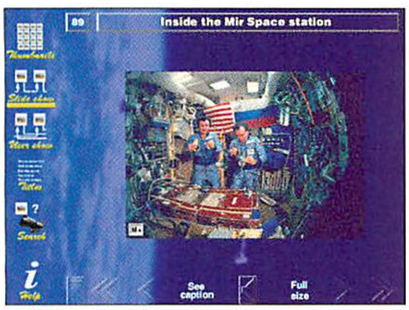
Resource
Tel: 01509 672222

Space Exploration



There doesn't seem to be as much interest in space travel as there was during the 1960s and 70s, although the recent landing on Mars and the uncertainty surrounding the Mir Space Station appears to have re-awakened some of the earlier interest.

Anglia's *Space Exploration* is a picture gallery of 108 slides with captions that can be spoken by the computer. Unlike many other CD-ROMs containing a predominance of pictures, Anglia have attempted to help the user to locate the exact picture required in two ways.



First there are nine thumbnail pages each of which contain 12 pictures which can be flicked through very quickly. When a picture is displayed that you want to see more clearly, double clicking on it will enlarge it and display the caption. From there, the user can move to the next or previous picture. The second method of searching is a keyword search of the captions. Entering 'Mir' listed all the pictures containing Mir in the caption.

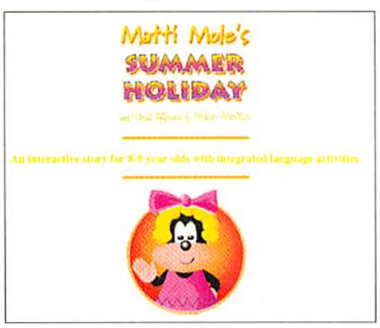
The content is more concerned with places than the people or machines, so while there are pictures of some hardware, this should not be regarded as a encyclopedia of spacecraft but rather pictures taken from spacecraft.

I imagine a great deal of sifting through photographs was required to select the 108 used in *Space Exploration*. Of all the thousands of photographs of all the varying qualities Anglia could have used, they managed to find some really clear and interesting shots of Earth, other planets and some spacecraft.

Anglia Multimedia
Tel: 01268 755811

Matti the Mole needs a holiday!

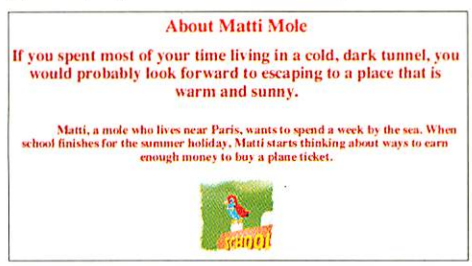
Sherston Software is about to release *Matti Mole's Summer Holiday*, the latest program from the award winning team of Mike Matson and artist Hans Rijnen.



Matti Mole's Summer Holiday, available on triple format CD-ROM, is a delightful interactive story for junior children (8-9 years). The program, which is full of fun and surprises, contains a wealth of stimulating language activities, all cleverly linked into the story.

Matti, like most moles, lives in a cold, dark, underground home and yearns to go somewhere hot and sunny for her summer holiday. The beach is a long way away. There is only one thing for it – Matti sets out to earn enough money to buy a plane ticket so that she can fly to the beach of her dreams. As children follow Matti's exploits, trying to raise the cash for her plane ticket, they are presented with no less than 16 different language activities (all at three levels of difficulty), 10 different interactive screens to explore, and four fun games to play.

The language skills covered include nouns and adjectives, verbs, alphabetical order, definitions, rhyming words, speech marks, joining words, plurals, opposites, capital letters and full stops.



The Triple format CD-ROM (Windows, Mac and Acorn) is priced at £34 (ex VAT) and will be available in September.

Sherston Software
Tel: 01666 840433

Learning Through Computing

Over the last few months, Learning Through Computing have been developing some new switch access programs.

Switch access is a facility to enable those with physical impairment to access the computer via a simple switch. The switch, which could be a foot switch or a vacuum switch which the user can suck, can control all of the major functions of the software. The first LTC switch title is the popular *Doorway Classroom Pack*. This superb multimedia program is supplied with several really useful files which students in Key Stage 1 and 2 will find most helpful.

LTC Tel: 0131-662 1881

Contacting me

You can contact the Education page by writing to me, Geoff Preston at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: aueduc@idg.co.uk

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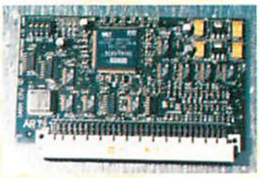
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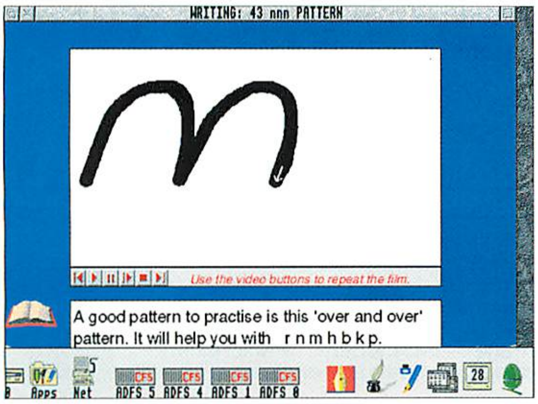
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Write on!

Everything you wanted to know about handwriting and more, **Geoff Preston** puts pen to paper



When Topologika's *All about Handwriting* dropped on my doormat, my first reaction was to send it straight off to Chris Jarman – one of the country's top handwriting experts for his assessment. He is well-known in primary schools as an advisor for teaching and improving handwriting and has written and spoken a great deal about the subject. On closer inspection, I discovered that the software was authored by none other than Chris Jarman, which says more about the quality of this software than I ever can. Because of this, I thought I'd better review it myself.

All about Handwriting is described as a reading and research activity for 7 to 13 year-olds (Key Stage 2 – 3). It's a CD-ROM based program designed to develop handwriting skills but, as the title suggests, it covers much much more.

Once loaded, a contents page is displayed which offers the user a choice of eight sections to explore including Making Ink, Writing Surfaces, Quill Pens and Handwriting Skills. Choosing the latter takes the user to a section which begins by looking at different pens and suggesting the most suitable type of pen – a hard fibre-tip pen for beginners.

The program then goes on to look at guide lines, tables with inclined tops for writing at and a few pages especially for left-handed people. My only query is that I'm not sure who this is actually aimed at. Some of the tips seemed to be directed at the child, but others were definitely aimed at the teacher, for example the suggestion of sitting a left-handed writer on the left of a right-handed one so that their arms don't keep colliding.

Following on from this section is some clever animation to demonstrate writing exercises. Back at the Contents page is a button marked Index which takes the user to a sort of encyclopedia of handwriting including some history and some useful hints and tips.

The disc comes with its own fonts which are used to good effect throughout the presentation. The fonts are not just provided as padding but have been specially drawn by Chris Jarman and include a font made up entirely of dots so that once printed, children can write over them thus providing more practice of letter formation.

As a parent, I bought my children several books to help develop their handwriting skills. The books were quite successful but what this program does that the books didn't is to raise children's interest in writing as a subject. This is not just a collection of exercises but a wealth of information about the whole subject of handwriting.

Also included on the disc is a demo from Topologika's forthcoming double-title CD-ROM *All About Lettering* and *All About Movement*. There is also a program called *JoinUp* which shows how to join letters together and some *Draw*files which may be useful.

Although All About Handwriting is aimed at 7-13 year-olds, there is a great deal of information which would be of benefit to older children and some adults I know.

And there's more....

At £35 + VAT, this CD-ROM seems good value. I certainly spent more than that on handwriting exercise books for my three children. But there's more. Also on the same disc is *All About Planes* – a reading and research activity for reluctant readers. Like *All About Handwriting*, *All About Planes* is a multimedia program created with *Genesis*.



This is an encyclopedia of planes and most things associated with them with simple text for children who can read, but don't. Chris Jarman has tried to make the text sufficiently stimulating to make children want to read. He has made navigating the software very simple, having divided the material into types of aircraft and other matters related to flying. These include the theory of lift and jet propulsion – in easy-to-understand language.

Each page of the multimedia presentation includes a picture or drawing with some carefully worded text which children will generally want to read. Many pages also contain a simple activity which will require the user to read something.

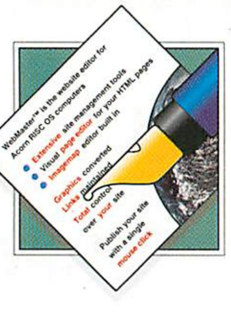
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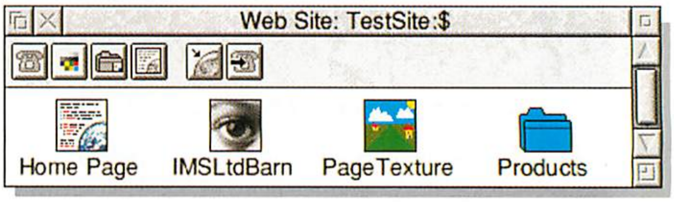
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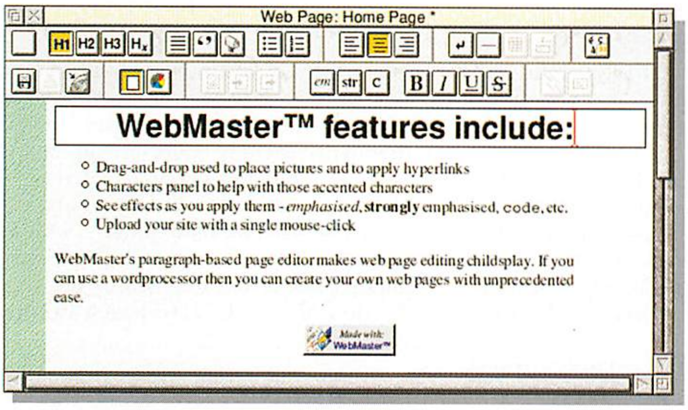
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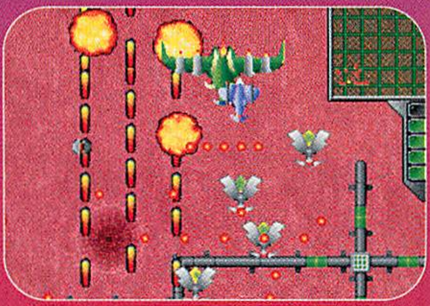
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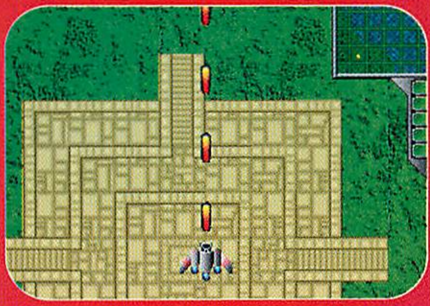




Is the games drought finally over? **Steve Mumford** finds out







Patience is, as they say, a virtue, and without wanting to jinx any of the ongoing projects out there, I think it's reasonably safe to say that we're likely to see an increase in the number of games released over the next few months.

Admittedly there have been casualties – the visually stunning shoot/beat-em-up *Stryker's Run III* has fallen permanently by the wayside, and certain games seem to have slipped quietly into the background (anyone remember *Proposal*, an intriguing hybrid of space simulator and *Doom*-style arcade game?), but there are ever more titles ready to take their place.

Brutal game power

Destiny and *Brutal Horse Power* are two games that are eagerly awaited – you've heard me talk about them before, I'm sure, but I'd be moderately surprised if one or both aren't released in the immediate future.

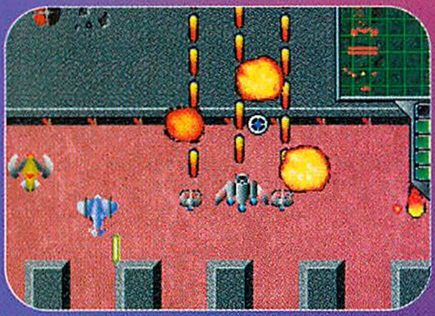
Both were visible in some form at the recent Wakefield show, and *BHP*'s presence precipitated a flurry of suggestions for the final game – the idea of imbuing the computer-controlled cars with sophisticated AI seemed particularly popular, as was Internet and local network play and higher resolution screen modes.

Destiny generated its own wish-list many months ago, and it's still growing. One thing's for certain – there are a lot of people out there who know precisely what they want to see in the next generation of Acorn games, and that can only be a good thing.

Extreme Force

I've been talking to Chris Egan of Skullsoft, the team behind *Arya*, about the shoot-em-up they're currently working on. Going under the provisional title of *Extreme Force*, it promises eight different graphical settings ranging from the inhospitable landscape of Mars to the watery depths of Atlantis.

Secret levels and end-of-stage guardians should also make the odd appearance, and the range of weapons should be plentiful – *Xenon II* fans will recognise the ability to collect credits during gameplay and periodically burn off your wealth in a handy hardware store.



If you like your games to be frantic, furious and almost completely devoid of plot, take a look at the information on Chris Egan's Web site – you'll find his homepage at *http://www.eganc.demon.co.uk/* I'm sure they'd appreciate any comments or questions you might care to send their way. I for one would like to see a two (or even four) player mode – *SWIV*'s co-operative gameplay added another dimension to the title, and was responsible for giving me mild cases of RSI on a number of occasions.

Celestial housekeeping

Geoff Holland from Generation Design has sent me his latest budget release – *AlfaXL5*. It's best described as a somewhat surreal cross between the memory game *Simon* and a vertically scrolling shoot-em-up. In an effort to make things a little clearer, here's the plot in a nutshell. The sheer number of dead satellites orbiting the planet Earth have made space travel too hazardous, and it's time to do a bit of spring cleaning. However, it's vital to dispose of them in the correct order – to avoid producing a devastating cascade of obsolete hardware, perhaps – and so you must seek out and destroy the satellites in alphabetical order. The screen scrolls vertically, and left to its own devices your spaceship will slowly fall downwards.

Gameplay is simple – use the thrust key to travel up the well, and shoot the objects in sequence. The proceedings are complicated by the arrival of small bouncy objects that float almost randomly over the screen, and on later levels the identifying letters on the sides of the satellites have a nasty tendency of falling off.

There doesn't appear to be an upper or lower limit to the playing area, but the satellites are only located in the middle section and there's no other way of telling where you are – wander away from the main playing area and things become rather disconcerting. Scrolling is very smooth, and the backgrounds have a pleasant 'plasma' feel to them, although the sprites themselves are a little basic in places. However, the way the stars and the plasma fields slide past each other is unsettling; heading in opposite directions, the scenery does little to suggest the feeling of motion and I spent the first few minutes thinking I was flying backwards – very weird.

All in all, AlfaXL5 is a simple game that might appeal to the younger games players out there. Its style won't be to everyone's tastes but there are lots of options to cater for a whole range of skills. Generation Design can be contacted at 2 Whitecliff Gardens, Blandford Forum, Dorset DT11 7BU. If you're connected to the Internet, take a look at their Web site at http://www.argonet.co.uk/users/genden

Frodo



Graham Nelson

on the new Commodore 64 emulator

In an age long past (1994), in a land far across the seas (Germany), Christian Bauer wrote an assembly-language program for his Amiga to play music files left over from the defunct Commodore 64. As Mr Bauer is, to put it mildly, a Tolkien fan – even the *Frodo* program logo is spelled out in the late Professor's runes – he will not mind me saying that Frodo has grown in power like a giant spider of the mountains, hatching out its brood into the innocent machines of today.

In particular Frodo 4.0 has been ported to RISC OS by Andreas Dehmel and it's a very impressive piece of work. To give you the bad news first, Frodo makes severe demands on processor time – you'll need a Risc PC – and although you could plod through without a StrongARM, I wouldn't recommend it. On the good side, Frodo is free, runs in the desktop and I've yet to find a C64 program it won't handle properly. If you do have a StrongARM fitted, you can run the C64 at between 150 and 200 per cent of normal speed, which feels about right.

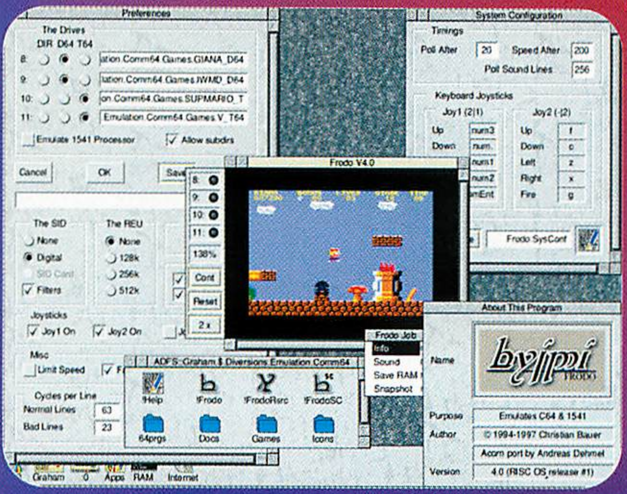
Why so slow?

Architecturally the C64 was a typical 8-bit micro of its day. For instance, it used the 6510 processor – a remake of the BBC Micro's 6502 with a messily expanded memory map, enabling it to have 64K of RAM. It had the usual accessories: Two chips running input/output, a sound controller (called SID) and a video controller (the VIC-II).

Most video chips, like the BBC Micro's, weren't very controllable. They had only a few registers for setting a screen mode and its start point in memory – which you could move around to scroll the picture across the screen. The C64's VIC chip was far more powerful and mysterious, having (like its sister-chip, SID) numerous undocumented and unintended features. It is almost an entire second processor: moving sprites around the screen, detecting collisions, scrolling or changing the style of the screen, adjusting border areas and so on.



Imitating this is far from easy, even given the relatively low screen dimensions. I usually run Frodo in a RISC OS desktop of 480 by 352, so that the C64 display fills most of my monitor. Frodo emulates the two processors alternately for a run of cycles each, switching at the end of each raster line – that is, each line of pixels being displayed by the VIC as it continuously makes up the screen. This might not be accurate enough if a game program is meddling with the VIC in mid-raster-line, so a sharper but slower version, *FrodoSC*, is also available. This switches between the processors every *Single Cycle*.



Using C64 disc images

Armed with that level of hardware support, and drawing on a big American user base, the C64 commercial games industry was enormous and prolific. As usual there are vast archives of pirated and forgotten disc images on the Internet. These are stored in two main forms: .D64, as used by Commodore disc drives, and .T64, derived presumably from tape formats.

Frodo doesn't include instructions on how to use a C64, though a group called 'Project 64' has for some years now been typing in every manual, release note and cassette sleeve it can find. Here is one way to run a program, anyway. Drop a file into the 'Drive 8' slot of Frodo's 'Preferences' window, select the right radio button (.D64 or .T64) and click OK. Read the directory by instructing the C64 to LOAD "$", 8 and LIST the result (yes, as if it were a BASIC program). Anything coming up as a PRG is a program; you can LOAD "NAME", 8 and then RUN it.

Commodore 64 games have a colourful, cartoony look at their best – the screen resolution, at typically 320 by 200, is not high, but there are 16 colours, rather than the basic 8 of the BBC Micro or Sinclair Spectrum, and the VIC chip makes a C64 a match for any of the stand-up arcade games of the period. Reviving all that, Frodo is one of the neatest free programs I've seen for RISC OS in a long time.

URLs to try

http://www.Uni-Mainz.DE/~bauec002/FRMain.html
The official Frodo home page

http://www.debra.rau.ac.za/C64/software/
For numerous C64 disc images

http://ourworld.compuserve.com/homepages/pcgeek/proj64.htm
For Project 64

http://www.student.nada.kth.se/~d93-alo/c64/gianna/index.html
For The Great Gianna Sisters page

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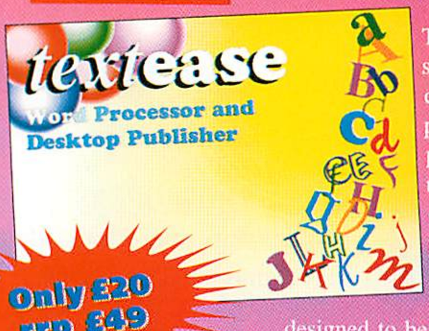
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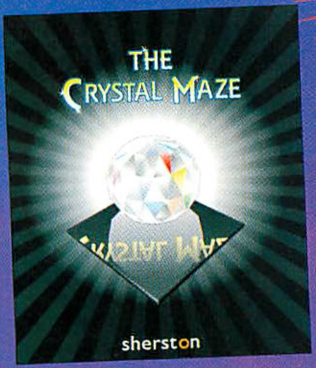
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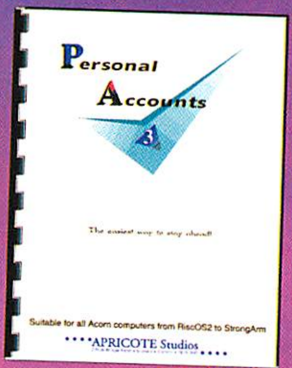


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Rambles through

Acorn Wood

Another question and answer session from **Mike Cook**

At a recent editors meeting, which was most notable for the size of the chocolate dessert I ate, it was mentioned that people don't communicate like they used to.

The letters received for the hints and tips page tend to be very specific now. Nevertheless, I hope that you feel that you can contribute or comment on anything said here in Acorn Wood. As you know, I don't have all the answers and often there are more ways of killing a pig than strangling it with butter, as my father used to say (we never did find out why). So if you want to pass anything on or have an alternative answer, please let me know.

Having just listened to a summer's worth of test match cricket commentary on the radio it strikes me, as it does every year, that someone could write a really good computer simulation of this. You know, one of those random phrase generators that were all the rage in the early days. It could be programmed to make comments about pigeons at regular intervals, discuss the trains pulling into and out of the station and thank people for cake. Oh, and as a side line it could also make up some cricket.

Patrick Borg from Malta is involved in a sort of hunt the Snark quest, he writes:

Many times in *Acorn User* there are questions about RISC OS 3.5 hard disc upgrades and Filecore extensions are mentioned. I have bought a Seagate 2.1Mb hard disc and have RISC OS 3.5 on my Risc PC. I have searched for these Filecore extensions on the Acorn FTP site and Acorn Cybervillage site but there is no mention of them. Please can you help me out?

Well I haven't talked about them yet, but let's start now. For all operating systems up to 3.5, there is a 512Mb limit. However, there is a module that was distributed to Clan members called Filecore beta module. As its name implies, it was never released officially and is not supported, but I believe it can be found on the Clan Web site which is for members only.

The best solution is to upgrade to a higher operating system, however, there are some commercial solutions beginning to emerge. For example, Simtec have produced an IDE module which enables you to attach larger hard drives and also lets you use an ATAPI CD-ROM on the A310 and upward including the A3000 and A4000 series computers. The upgrade software for this board allows you to partition your discs.

An alternative is the software from Yellowstone which also allows you to partition your discs. However, I have heard that, in contradiction to Acorn's wishes, they use the serial number built into computers from the A3000 onwards for copy-protection. This means if you have two machines you have to buy two copies. If you have RISC OS 3.6 or 3.7, you can have drives up to 16Mb but, due to a 'feature', if your drive is over 2Mb then only format or initialise it using the beta version of *!HForm*. Acorn advise initialising it if formatting does not work, but you must set ADFS buffers to 0 to guard against a bug in the ADFS filecore that could possibly damage the data on your disc. I am told that RISC OS 3.71 on the A7000+ has this one cracked.

If you are contemplating a bigger drive, I would recommend SCSI as all cards come with formatting software that allows several partitions. It's even a good idea to break up smaller discs, this is because the number of blocks the operating system uses is fixed. With a bigger disc, bigger blocks are used.

That could become wasteful as a file has to use an integral number of blocks. If your block size is, say, 16K then you use that much hard disc space just to store a file with a few bytes. Therefore smaller partitions mean more efficient storage, however, if you have fewer mainly large image files then this does not matter so much.

R. H. Joll is looking to update an old machine, he writes:

Some time ago you wrote an article about simulating a bi-directional port on the A310. Would it be possible to use a parallel port Zip drive on my computer using something similar? I am currently using a Zip drive with an A3010 and also a PC.

Sorry, but I don't think the transfer rate would be fast enough for a Zip drive as the data comes off the disc at quite a high rate and there's no way of stopping it. Therefore it has to be transferred onto the computer sharpish. Short of putting a large FIFO buffer in the path, squeezing all the data through one input bit takes too long for this application. I regularly get requests to build an expansion bi-directional printer port as a project but this would be nearly as expensive as buying a SCSI module, and anyway it would need the operating system changing.

It looks like Chris Bell from Llanbedr PS has been a resourceful chap, he writes:

If I had written to you every time I had a problem over the last two years, I would have been writing every week and would never have had all the fun solving them myself! However, I have finally been beaten.

I recently bought an HP LaserJet 5L printer and found that the Acorn printer drivers don't support the use of 'Economode'. So I wrote my own 'Remote Control Panel', similar to the PC version which was supplied with the printer. I intend placing it in the public domain as soon as one serious hiccup is eliminated...

I don't know whether there is another way to send commands to a printer, but I have done it by writing to a pseudo-file called printer: ...

```
file%=OPENOUT"printer:"
FOR i%=1 TO LENa$
BPUT#file%, ASCMID$(a$,i%): NEXT
CLOSE#file%
```

The problem is that the computer freezes if a printer isn't connected and ready to go, which also means that it must be loaded with paper. There must be a way to test whether a printer can receive data or not – how is it done?

It's one of those problems that you think is simple but you try to solve it and it doesn't work. My first thought was to look at the space in the printer buffer, send a control character to the printer and look at the space in the buffer again. If they are the same you have a printer online but if they are different then there is no printer and the character is waiting in the buffer.

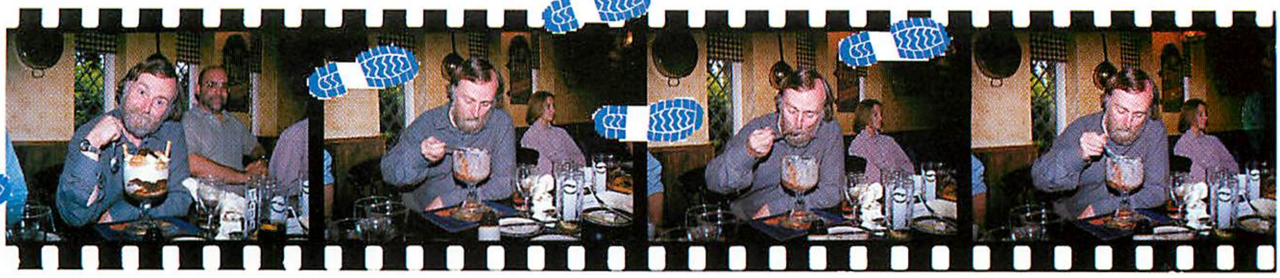
When I tried it it didn't work and the whole system jammed up. But then I thought of a much simpler way and this worked – I've tried it. All you need to do is look at the status register, bit 7 is the Busy line. If it's a zero, there is no printer but if it's a one, there is. You can test for the paper with bit 5, a zero means it is OK but a one indicates a paper error. You can access the status register with a Parallel_Op call like this:

```
SYS"Parallel_Op",0 TO ,,S%
IF ("S% AND &A0) <> &A0 THEN
PRINT"Printer not on line"
```

There is then a supplemental, for which I unfortunately don't have an answer:

I have a Risc PC 600, but the standard Configuration/System utility doesn't always work as it should and I have found the older SysMerge utility to be more reliable. For example, Config/System won't load the Templates modules from the Dec 96 Acorn User cover disc, but SysMerge will. But even SysMerge won't load the Toolbox modules from the Feb 96 AU cover disc – it gives an 'increase free memory' error, even when there are several Mbytes available. What is going on?

Not sure, but the memory the message is talking about is not the total memory of the machine, it could be the module area, system stack or Cur-



sor/System/Sound memory. Increase these by dragging the bar in the 'Task' window obtained by clicking on the Acorn icon. Has anyone else found they are getting trouble like this?

Next up Dave Ferguson, who describes himself as an over ambitious ogre, wants advice on interfacing:

I read in the February and March 97 Acorn User about a certain serial input/output board you described. This is the kind of board I think I am looking for to do some control projects. But I have a problem – money. Nope, I'm not asking for the board free (cos I know I won't get it), but at a reasonable price.

I understand that you charge around 30 quid for the board plus 12 quid for the 'expensive' microprocessor. You also said that the board would run at 9600 bps, which isn't incredibly fast, so I was wondering if the 40MHz chip mentioned would be value for money. If the kit can be easily assembled from the components by a 'not used a soldering iron for a year' type of guy, then I'll take that option. Incidentally, the reason why I'm not content with 9600 bps is because this baud rate may limit the type of project I have in mind. Well, I'm ambitious!

Read the article again – the whole kit of parts including the processor is £25, but if you want to purchase just the processor, you can do for £12. However, if you want me to make it for you, the assembled and tested system costs £35.

It takes me nearly an hour to construct and test – try getting your car mended for that price. I don't know where you get the idea that 9600 baud is not fast, perhaps you are thinking of Internet connections transferring large chunks of data, but for interfacing it means that you can switch something on 960 times a second.

If you are writing your application in BASIC on a non-StrongARM system, 9600 baud is faster that the language can cope with. Using the faster processor would only allow you to double this speed as the software is written for a 12MHz clock. So you could use a 24MHz crystal and get 19200 baud. Anyway, if money and speed are a problem, why not use the printer port – it's fast and free.

By the magic of e-mail David replied:

It's free and fast eh? Does that mean I don't need to buy a buffer? What happens if you bit-bash 240V a.c. down the parallel port then? Have you described how to make a parallel buffer in a previous topic in Acorn User? Thanks for the response though, I reckon my Dad may cave in and fund my project – he says as he accidentally disabled all mouse support from his fathers PC, hoping he will fix it before the weekend.

If you put 240 volts ac into your computer, you mess it up in a rather permanent way, so the trick here is not to. If it's mains you're thinking of controlling, use a solid state relay, they are optically isolated and so are safe to use. I have covered these in the very early issues of *The Micro User*, September 1983.

If it's proportional control of the mains you want try August 1990, these articles are available on my Web site, see my links from the Acorn User site. I haven't done a buffer project as such as there is really not much point, if a specific project needs a buffer I include it as part of the design and only an optical isolator will protect you from mains. The problem with an opto isolator is that you need a separate power supply on each side so, for most applications that don't need it, it's far too expensive. However, the phrase 'learning to walk before you can run' tends to spring to mind here.

Paul Mellor has been making one of my projects, he writes:

I was delighted to see mention of a source of the Reveal FM Radio cards in the July Acorn User. Both my father-in-law and myself have now received cards from Paul Lourdan. Your article in the September 96 issue concerning the Radio Card left me with one question unanswered: Where is the best place to tap into to obtain the +5V necessary for the card? I have decided to use a mains transformer to obtain the +12V, rather than take it from a spare podule, but I would assume that +5V is readily available from the computer rather than trying to step down the +12V input.

Well remember that the 12 volts needs to be d.c., and smooth at that. The sort of battery savers that you can get cheaply are not going to be much use here. I am not sure why you can't get both voltages from a podule. Just use a plug if you have a free slot, otherwise solder onto the back of an existing podule.

Another source of the voltages would be those bundle of wires that are just taped up inside the computer waiting to be used by external hard drives and the like. There are both 5 volts and 12 volts on those. They end in a socket so you could even fit a plug on your flying leads to make a neater reversible job of it. If you do want to get the 5 volts from your 12 volt supply then a simple LM7805 regulator and two capacitors would do the trick for under a pound.

Dave Lawson has been trying out his e-mail on me and has a piece of advice and a problem:

Having recently joined the Internet fraternity I would like to point out an interesting phenomenon I have experienced which I have not seen reported in your pages.

When I am using the computer with the modem switched on, whether in use or not, any second incoming phone call will override a first call due to an incompatibility with BT's Call Waiting facility. This has the effect of breaking the Internet link and losing it whenever anyone rings in. Apparently BT's engineers are working on the problem and perhaps they will let the world know when they have fixed it, through the computer press hopefully.

BT's Call Back and the Internet don't really mix. You see you are squeezing every ounce of bandwidth out of your phone line, so I don't see what they can do about it. Often 'we are working on the problem' really means 'we know about it but can't do anything about it'. Anyway, let's not be too cynical, but then again let's not hold our breath. Anyway onto your problem:

I have been having a lot of problems trying to use a flatbed scanner on my A5000 with an Aleph One 486 card. With both a Primax and a Plustek scanner, at 300 dpi in B/W and halftone mode it will try to scan two lengths of the bed and show the result as if it were one A4 size. This is not very useful and possibly damaging to the scanner as the mechanism tries to go off the end. The only option offered by Plustek is to change the parallel port mode to EPP but the PC card does not support it. Any suggestions please before I take it back and try?

Sorry none from me, any readers found a way round this?

Last up this month is from Robert Walters, he asked which music keyboard to get last month, now he has hit another snag:

Many thanks for your advice concerning keyboard connections. On your recommendation I have bought a second-hand MIDI upgrade (AKA12) to connect a Yamaha PSR-320 keyboard to my A3000. This keyboard can perform a bulk memory dump to the A3000. However, I am unable to use this facility: I have tried using SYS "MIDI_RxByte" from BASIC to receive the data byte-by-byte, but it always crashes with the error 'MIDI receive buffer overflowed'.

I suspect that the data is being transferred too fast to be received in this way. Is there any way around this problem? I would also like to know where I can obtain full documentation for the SWIs provided by the MIDI podule, of the type given for other modules in the *Programmer's Reference Manual*.

The problem here is that data is arriving too quickly for your BASIC program. Fortunately the computer has a buffer where it puts MIDI data that has not been processed. However, there is so much data that the buffer is overflowing. Fortunately there is a solution – make the buffer bigger.

The call MIDI_SetBufferSize can be used to find the current size of the buffer or set a new value. Pass zero in R0 and R1 and you will get back the buffer size and total space from RMA for new buffers. If however, you put a zero in R0 and a number in R1 it will attempt to set the receive buffer to the new value. You might have to adjust the RMA from the task window if you need more space.

Remember that each byte of MIDI data is also time stamped so you will need five times the buffer space as the number of MIDI notes you are trying to receive. After setting, use MIDI_Init to just clear the buffers, passing it the value of 3 in R0. Your best bet is to use MIDI_RxCommand instead of MIDI_RxByte as this reduces the SWI time overhead. The MIDI commands are described in the Acorn MIDI user guide and is Acorn part number 0480,354 however, I am not sure if it is still available. Does anyone know if this is available as a StrongHelp file? AU

CONTACT:
auqanda@idg.co.uk

Lava, love and silly sentences. All in a day's work for **Dave Acton** and **Dave Lawrence**

star info

Hair today

Author: Mark Adcock

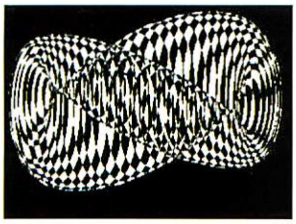
According to **Mark Adcock,** *Hairnet* is a pattern that is hard to describe, but it does contain a load of rotation and SIN and COS tables. Judging by the name, we guess that Mark's hairdresser must have a particularly challenging job! You can change the X and Y scaling of the net by moving the mouse and freeze the rotation, although not the kind of morphing effect, by holding down the space bar.

With a slight modification of the plotting routine, you end up with *NotHairNet*. This uses EORed filled ellipses instead of just outlines. Mark says unfortunately this doesn't look like a hairnet anymore. Err, well, we're not really sure that the first program *does!*

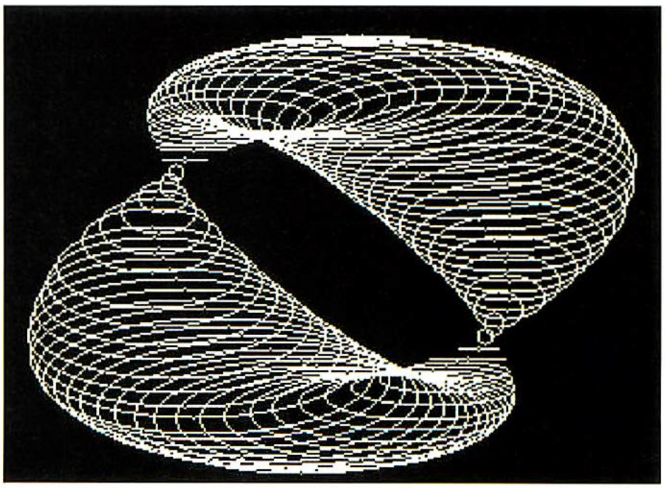
Also from Mark this month is the cunningly named *WibbleLine*, so called because while on the surface appearing to be nothing more than a simple line, it is possible, via the application of mouse movement, to wibble it.

Press Select above or below the line to move the corresponding part to that level. Press Menu to restore a segment of the line to the middle of the screen, pressing Adjust restores the whole line.

Inside there are several variables to change. **FADE** is either 0 or 1 depending on whether you want a fading effect behind the line. If **FADE** is set, change **NUM_OF_LINES** to the number of lines you want in the fade (including the original white one). We've added a bonus feature here – if you set **FADE** to a number greater than 1 (16 for example), then the faded lines will be plotted at different vertical offsets from the original line. This adds a kind of pseudo 3D effect to the line. It is possible to change this value while the program is running using the keys '0' to '9'



You can also vary the variables that control the stretchiness of the line, **W1** and **W2**. High **W1** returns to middle of screen. Low **W2** gets pulled by neighbouring segments more. Try **W1=4 W2=10, W1=2 W2=10, W1=2 W2=5** etc. Sometimes if you get the values wrong, the line may stretch off to infinity. Set **N** to set the number of segments on the line (Low = faster).



Kore with a K

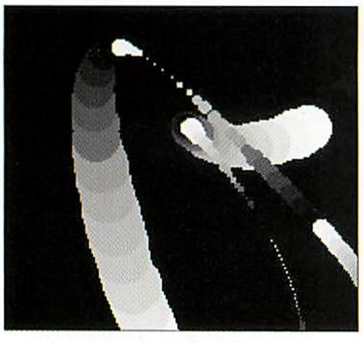
Author: Ian Harper

It seems as if **Ian Harper** has not been too impressed with some of our recent musical offerings. We're far too polite to pass on his comments, so instead here's Ian's own Symphony entitled *Hard-Kore*. Ian would like to point out that it is Hardcore and there is nothing happy about it – if anyone would like to make any derisory comments, we'll be sure to pass them on.

a-cycling a-tractor

Author: Chi Hirst

Ms Chi Hirst, author of last month's Damien Hirst inspired backdrop, also sent in another (very late!) entry for our circle competition. As Ms Hirst points out, we have covered Lorenz Attractors before, but this one is slightly different in that all three dimensions of the attractor are represented – the size of the circle is related to how far away the point is from the observer. 'This is supposed to give it depth, but instead just looks like a pulsating mess.'



That seems a little harsh – but who are we to say?

An extra circle is plotted between each calculated pair of points to smooth off the sparsely populated areas.



The ubiquitous grey-scale colour-cycle makes an appearance which helps bring the plots to life. Three varieties of attractor are supplied in the form of *Lorenz1, 2* and *3. Lorenz2* gets our vote as the most three-dimensional.

Expound

'Silly program producing silly sentences (often funny) (ha ha!) and sentences with words, words and words repeated (often funny), silly sentences repeated (ha!) (often funny). Very silly.

Expound is a program we've had sitting around for a long time now but not yet had space to include in the magazine. The original idea appeared in Douglas Hofstadter excellent book *Metamagical Themas*. It was also discussed in the April 1983 edition of *Scientific American*. It is based on the premise of recursive sentences and, more specifically, recursive acronyms.

For a familiar example, take 'ARM' which stands for Advanced RISC Machine. Now what about RISC? Reduced Instruction Set Computer – so we now have ARM *actually* standing for Advanced Reduced Instruction Set Computer Machine!

In his book, Hofstadter speculated about *recursive* acronyms. His first attempt was TATO, which stands for 'TATO (And TATO Only)' – not very meaningful, but a useful starting point. What happens if we expand this definition:

TATO (And TATO Only) (And TATO (And TATO Only) Only)

Of course, you can now expand this again. And again. And again. Hofstadter proposed to introduce an element of randomness into the process to prevent infinite expansion. At the top level, the chance of expansion is 100 per cent, after one expansion this is reduced to 80 per cent, the next level has only a 64 per cent chance and so on – each level of expansion reducing the probability by a factor of 0.8.

A luscious lunch

After this rather trivial introduction, Hofstadter moved on to a rather more meaty and rather more Italian example. Taking 'macaroni', he suggested that this might be an acronym for:

macaroni and cheese (a repast of Naples, Italy)

Already you can see a potential recursion, but he also went on to suggest that for 'cheese' you might say:

cheddar, havarti ementhaler (especially sharp ementhaler)

and for 'repast':

rather extraordinary pasta and sauce, typical.

In total he came up with 22 inter-related words and definitions and, of course, a computer program to create some sentence expansions:

"tomatoes on macaroni (and tomatoes only), exquisitely sweetly pickled in cheddar, havarti, emmenthaler (especially strong, hearty, and rather pungent ementhaler) endive dressing on macaroni (and tomatoes only), exquisitely spiced on ....

To see some (complete!) example output, double-click the file *Italian* in the *Expound* directory of the disc. If you load this file into an editor, you can see the full list of words Hofstadter defined.

Huge trees

Having played around with this basic premise we rapidly discovered that it's very difficult to come up a genuine set of acronyms and definitions. In our own examples on the disc, we've therefore tended to define our words using the same principle, but have not restricted ourselves to acronyms. This seems to produce one of two varieties of sentence - the poetic (try *Desert)* or the advertisement (try *Dessert* or *Chocolate).*

Chocolate demonstrates an idea we had to extend Hofstatder's work – that a word might have more than one definition. We've defined 'rum' as either *'dark Jamaican rum'* or *'rum and raisin'.* When 'rum' is expanded, one of the two possibilities is chosen at random. Have a look in the file to see how we've done this.

You may notice that most of these files have a number of possible 'top level' words – for example, 'fondant', 'chocolate', 'truffle'. By default, double-clicking the file will expand the first word defined. It is possible to expand any of the other words by using the command line interface (sorry, no WIMP front-end!). Double-click SetHere to change to the Expound directory and press Ctrl F12 to open a task window. You can now type: Chocolate fondant to see if you'd prefer that to the raspberry truffle.

Our final example demonstrates another feature we've added to the 'spec'. Next time someone asks you the way to the post-office, try *Route,* although be sure you know your way to the hospital if they find you again! If you look in the *route* file, you'll see words in |s rather than "s. This forces the expansion to happen regardless of the current probability.

We'd be very interested to see any *Expounds* you may come up with – as always different is best, so don't just send in an expound for a packet of sweets instead of chocolates!

On the boil

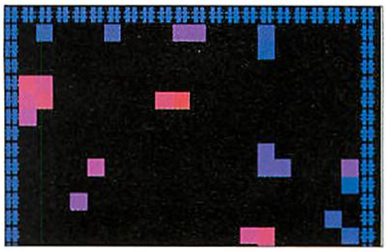
Author: Rob Jeffs

Our quest for the best lava lamp simulator continues with a promising submission from **Rob Jeffs**. *DigiLava* may well look like a hybrid between *Tetris* and *Life*, but it does seem to adhere to some laws of physics in its attempt to recreate that Matmos experience.

Each particle in the simulation has a temperature which determines whether it rises or sinks.

They also have a tendency to group together. Particles heat up at the base of the lamp and cool near the top, heat is also transferred from nearby particles.

We're still hoping for that kind of random blobbiness – perhaps someone could glue in some bezier curved shapes into Rob's maths.



Trick cyclist

Author: Scott Boham

*info simply wouldn't be the same without a colour-cycling demo or two, so we are pleased that **Scott Boham** has taken a break from waiting for the end of the world to provide not one but five fine examples of the breed.

One surprising feature of them has to be the use of that ever-popular SWI call ColourTrans_ConvertHSVToRGB, which I only ever recall using once and that was in a demo to show what it did!

The HSV cone is an alternative way of looking at, and categorising the displayable spectrum to the more familiar RGB cube.

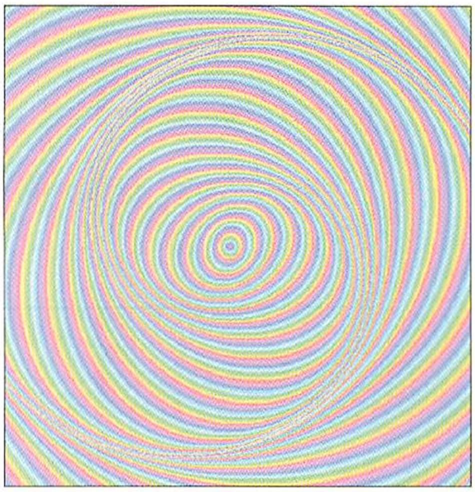
The HSV stands for hue, saturation and value. (I always thought that they could have come up with a better V than 'value'.) HSV values are 32-bit numbers, the top 16 being the integral part and the bottom 16 the mantissa.

Hue ranges from 0-360 (degrees) with no fractional element. Saturation and Value ranges from 0 to 1 (i.e. 0 to 65535).

As hue rises from 0 to 359 degrees, the whole spectrum is traversed, so fiddling with the H part of the HSV model is actually quite a neat way of setting up a good rainbow palette for demos like this.

Choosing a saturation of 0.5 or thereabouts means that the colours have a certain 'washed-out' look, and this has an almost anti-aliasing effect on the cycling.

Change the 32,000 to 8,000 for an even more pasty effect, or 65,000 for much sharper colour bands.



In the year 2248...

Author: Scott Boham

'You hear in the media' says **Scott Boham**, 'about computers crashing in the year 2000 and you think – I'm okay, I have an Acorn and the dates are stored as 5-byte values and it's going to be ages before it crashes.

'Well, actually the date is June 25 2248. This prog is a bit early for the event but there's no harm in that. It simply sets your date and time to a minute before the 5-byte integer value is at its maximum.

Load up *Alarm* and watch the time and date flick back to 1900 when it gets to 06:57.57s!'

The perfect match

Author: Phillip Mellor

Forget DateLine, astrology and birth charts. If you want to find out how compatible you are with a potential partner, all you need is *Cupid* by **Philip Mellor.** He claims that the matchmaking method employed is based on a passing fad at school.

It works like this. Say Joe Bloggs wants to see how much Jemima Bloggs (no relation) loves him. You go through each letter of the word 'Loves' and count the number of times it occurs in both of the names. In this case, there are 2 'L's, 3 'O's, 0 'V's, 2 'E's and 2 'S's. You line all these numbers up together – 23022. Then you go through this line adding up the pairs of numbers, then use these results to form a new line:

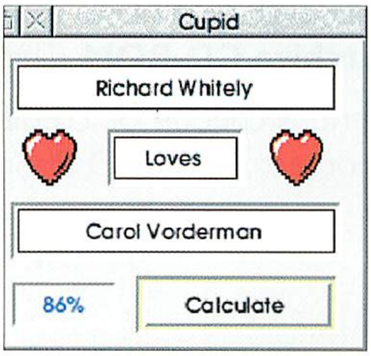
23022

2+3=5, 3+0=3, 0+2=2, 2+2=4

5324

If the new number is 100 or less then that is the percentage of how much the people love each other. It it's greater than 100 you continue to add up the pairs of numbers until you have your percentage. Continuing with Joe and Jemima, you'll come up with a value of 86 per cent – ahhhh!

To use *Cupid*, simply type in the two names and click on calculate. You can also calculate other compatibility issues by changing 'Loves' to the relevant word.



Based on the principles employed, we think that *Cupid's* predictions must be at least as accurate as those of Mystic Meg.

```
From:                     Denis Howe <dhowe@linklaters.com>
Date:                     Mon, 02 Jun 1997 13:30:35 +0100
To:                       paul.NCS@paston.co.uk
Subject:                  Archive magazine

I just had to email you to say how excellent I think Archive
is. I've known of it for years but only recently subscribed
in response to the ad I received through the post.

I wish I'd subscribed ages ago, I guess I always imagined it
was one of those sad little "This is *your* magazine, please
send an article" fanzines, but now I discover it's stuffed
with a wealth of authoritative, professionally presented
articles, several of which were of immediate relevance to me.

Thanks and keep up the great work.

Denis Howe
```

Stoner crows

Author: Nigel Stoner

Well, regular **Nigel Stoner** isn't actually one to crow about his work, but his latest two BASIC demos would surely have won a place in the *Circle Challenge* had they been entered.

Rings is simply one of the those 'wheels-within-wheels' affairs. We can all muse about how fast the little ring in the middle must be spinning, and the nerds among us can probably actually calculate it. Apparently the effect is a faithful reproduction of that featured in a demo on another machine called *'Jesus on Es'*. We have also found that if you keep your eyes fixed upon the central circle, after a couple of minutes you'll have a nasty headache.

Megaballs shows off the potential of the plotting modes that have survived from the earliest Acorn machines to this day. It seems they are rarely employed now – other that by our dear friend Jan Vibe perhaps – but they do provide an easy means of doing some quite wicked things in humble BASIC.

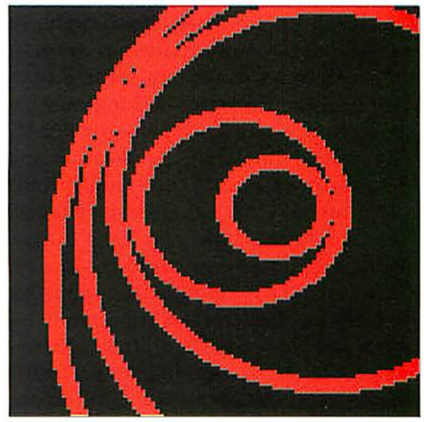
The (usually ignored) first parameter of a GCOL indicates how you would like to apply the colour. 0 is the default and simply means 'set', but the logical operators OR, AND etc. may be invoked using the appropriate code:

0	set
1	OR
2	AND
3	EOR
4	NOT
5	
6	AND NOT
7	OR NOT

Of these, **EOR** is possibly the most useful, since if you **EOR** the screen with a colour twice, the screen is restored. Nigel's demo uses **GCOL 3**. By carefully changing some of the palette to black, parts of the circles become invisible.

Now I should warn you all that there follows a historical anecdote that will be of little meaning to anyone born after 1980, or who doesn't know what sideways RAM is. The old BBC Micro wasn't exactly awash with memory and we had to work hard to squeeze everything in to 32K I can tell you.

If you wanted to use the massive 160 by 256, 16-colour resolution (I kid you not) you had to sacrifice 20 whole K, leaving a mere 9 or 10 for your actual game. One day, the other Dave and I devised a way of getting some of this memory back. We would sacrifice the top eight colours – which were just



flashing ones anyway, and no use to man nor beast – and redefine them to be the same as the bottom eight. Then, we could use the top two bits of each screen byte for an extra 5K of storage, without affecting the picture.

This is the same basic idea as in Nigel's demo – he simply uses the extra bits to hide parts of his circles. Indeed, we planned to store the tune for a game in two-bit chunks on the screen – and no-one would ever know! Alas, this top plan never came to fruition, and now that memory is so abundant, such tricks are mere history. There endeth the anecdote.

Royston Rags

Author: Royston Palin

Time for a little syncopation now, from **Royston Palin** of Cheshire. We were taken by Royston's submission for two reasons.

Firstly, he supplied some high-quality original musical compositions. Secondly, he lives in *Repton Drive* which is a very cool address indeed. As you will know, we have a certain reputation in the column for featuring, shall we say, a wide range of musical styles. So, by way of contrast to Ian Harper's *HardKore*, here are six ragtime numbers from 16-year-old Royston that Mr Joplin himself would have been proud of. They were composed using *Rhapsody 3* and you will require this to enjoy them. Watch out for more from Mr Palin in the syncopated style in future months.

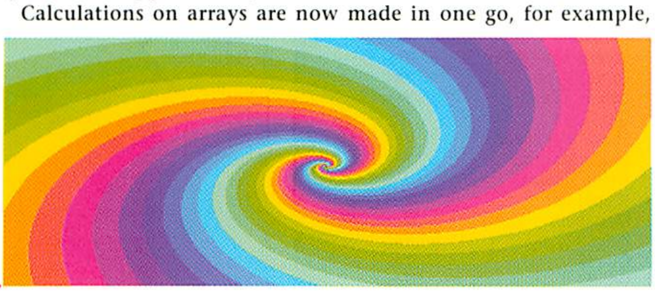
Quad piece

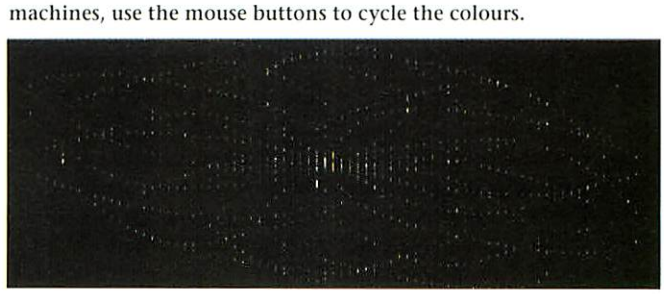
Author: Jean van Mourik

Okay, time to dig out your old *Acorn Users*. August 1996 is the one we're after. If you look on page 75 there is a very bad photo of what was actually rather a good demo by Darren Northcott called *Quad4*. Now, we're not sure what happened, but seemingly undaunted by the dingy pic, our own **Jean van Mourik** has tinkered with the original to produce the new, souped-up *Quad6* – quite what happened to *Quad5* we don't know.

Calculations on arrays are now made in one go, for example, A()=A()+B(), and the program has been made interactive – just play with the mouse and see what happens.

And Jean continues the colour-cycling/spiral theme started by Mr Boham with *Whirl2* – actually, I think *Whirl1* and *Quad5* must have run off together. It draws a logarithmic spiral, the logarithmic bit serving to give the finished image a good sense of depth. When done, which will take a few seconds on all but the fastest machines, use the mouse buttons to cycle the colours.





MDFs

Author: Andrew Buckingham

... or *mode definition files*, in case you didn't know are text files containing descriptions of your monitor and the screen modes it can support. You will find them in *!Boot.Resources.Configure.Monitors.Acorn* or other directories if you are using a non-Acorn monitor. **Andrew Buckingham** has been creating his own modes for the Risc PC using Acorn's *MakeModes* application and the results are on the cover disc.

AKF60 contains new modes for the standard AKF60 monitor – simply add them to your existing file. Take a copy first, just in case! The following new modes are supported:

• **640x480 at 100Hz**. 'This is primarily for the freeware demonstration *Xtreme*. *Xtreme* contains an MDF for 640x480 at 100Hz which is incompatible with the AKF60 due to an extremely high line rate, causing the display to flicker wildly for part of the demonstration. This is a replacement MDF that should be compatible with the AKF60.'

• **640 x 512, various refresh rates**. 'Mode 21 appears not to be supported on RISC OS 3.50, unless this MDF is used.'

• **840 x 624, various refresh rates**. 'It seems to me that SVGA modes of 800x600 pixels, while being nice round figures to handle, do not make particularly good use of memory: on a Risc PC with 1MB VRAM, 800x600 at 16bpp does not use up all the available VRAM. However, this mode does, thus giving larger desktop areas for 16bpp/32bpp (1Mb/2Mb) users, but not reducing the refresh rate significantly.'

• **1176 x 882 at 55Hz**. 'This mode was created for the same reason as above. 1024 x 768 at 8bpp/16bpp (1Mb/2Mb) does not use up all the available VRAM, and so I have designed this mode to give a larger desktop area with little reduction in scan rate.'

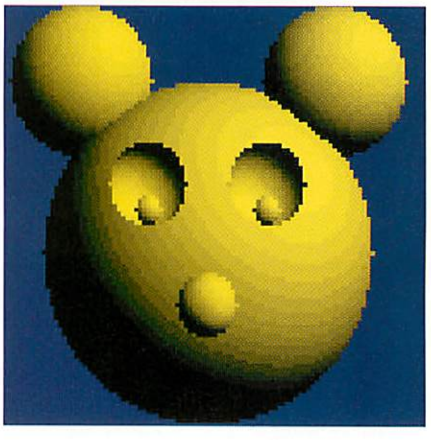
'*LARGEmodes* is a rather ridiculous MDF that I created for fun. They are designed to be some of the largest modes possible on the computer – mainly so that when PC users boast a 1600x1200 pixel mode on their new £3000 graphics card, I can say that I can do over 4700x3500 pixels on my standard Risc PC!

I very much doubt if any monitor could display most of these modes, and 39Hz would give anyone a migraine, but it's fun anyway. I have performed a screen grab of the 3200x2400 mode on my 1MB VRAM Risc PC; with the monitor switched off, of course! These files are included mainly for interest's sake, rather than for any serious use.

'Note that most of these modes require the VidC20 bandwidth to be higher than as standard, to obtain slightly higher refresh rates. The *BandLimit* file contains the new limits that I have used for over a year on my MK1 Risc PC 600 (1Mb VRAM). I have seen these figures quoted in several sources as the accepted normal limit, and so I have designed my modes around these.'

Bear necessities

Author: Thomas Madams



Thomas Madams admits that *Shade* is his first attempt at 3D light source graphics. If only all first attempts turned out like this. The demo is in two parts, and you will need to copy the files and programs onto a writable disc before starting.

One program creates a data file describing the 3D picture called *3dData*. In fact, two demos are provided – *makebear* and *makepic*. Each will take a few seconds to generate the file. When ready, run *shade* and be suitably impressed.

'The data file contains a 128*128 table of data. Each entry in this table consists of four bytes of information – the image's mask and three bytes for the surface normal of the picture.

'The routine is really quite simple. If the surface normal of the 3D image is defined in the form **(nx, ny, nz)** and the direction that the light is shining from is **(lx, ly, lz)** then the intensity of the reflected light is **(lx*nx)+(ly*ny)+(lz*nz)**.

This is a very simplistic model and ignores any specularly reflected light, that is, light that reflects directly from the source into the eye.

The routine also assumes that the light source is infinitely far away and so all the light rays are parallel.'

*QUIT

All submissions — not-too-large or small to:

***INFO, *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP**

or, if your submission is about **100K or less**, e-mail us (including your real address please) at:

austarinfo@idg.co.uk

You needn't include a letter but **please put your name, address and program title on every disc** and include a text file containing your name, address, disc contents and program details.

A SAE will ensure your discs are returned. *info submissions only please. Remember that we only have limited space on the cover disc, so smaller submissions are generally more appealing than larger ones. If you have a copy of *SparkFS* or *Squash*, try compacting your program(s). We are rarely able to accommodate individual items of more than 50-100K when compressed.

Compatibility table

Program	RISC OS 2	RISC OS 3.1	RISC OS 3.5+
Hairnet	Yes	Yes	Yes
Not Hair Net	Yes	Yes	Yes
Wibbleline	No	Yes	Yes
2248	Yes	Yes	Yes
Cycles 01	No	Yes	Yes
Cycles 02	No	Yes	Yes
Cycles 03	No	Yes	Yes
Cycles 04	No	Yes	Yes
Cycles 05	No	Yes	Yes
MOFs	No	No	Yes
Expound	No	Yes	Yes
Hardcore	No	Yes	Yes
Lorenz 1	Yes	Yes	Yes
Lorenz 2	Yes	Yes	Yes
Lorenz 3	Yes	Yes	Yes
Diga Lava	No	Yes	Yes
Shade Makebear	Yes	Yes	Yes
Shade Makepic	Yes	Yes	Yes
Shade Shade	Yes	Yes	Yes
!Cupid	Yes	Yes	Yes
Megaballs	Yes	Yes	Yes
Rings	Yes	Yes	Yes
Quad6	Yes	Yes	Yes
Whirl2	Yes	Yes	Yes

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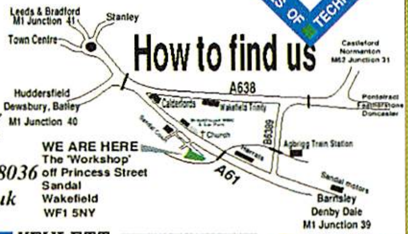
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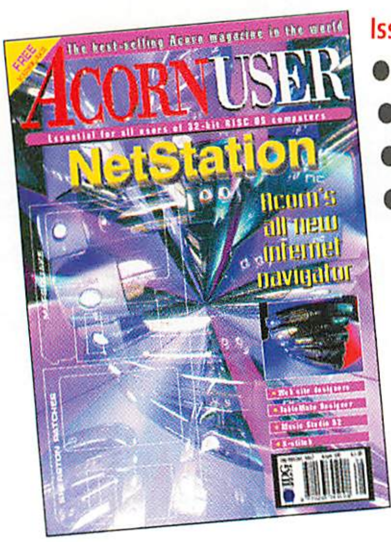
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How do you make a cross assembler?

Mike Cook shows you how

Last month I looked at some software to program the Maplin 16C84 PIC blower. Now, having put the cart firmly in front of the horse, I would like to show you how to produce the machine code files needed to feed the blower. What we need is an assembler, furthermore it needs to be a cross assembler. *I say, I say, I say, how do you make a cross assembler? Poke your fingers in his eyes, I thank you.*

Good, now that's out of my system I can get on. A cross assembler is one that is run on a platform different to the destination platform. An assembler takes a text file full of mnemonics and turns them into the bytes of machine code needed to run the program.

There is a one to one correlation between a line of assembler and a machine code instruction – in this case each instruction is a 14-bit word. The word is divided into several fields, one part defines the instruction itself and other parts can give data to be used or registers to use. An assembler assembles this information into the word of machine code.

If it were only that simple. However, you not only have to cope with the processor's instruction set, but you must also cater for labels. These mark places in the code so that you can jump to them from other parts of the program. Then you have to deal with constants, for example, instead of remembering that a particular location is actually the output port you can define a word, say 'outp' and assign it a number. Sometimes you might like to do some arithmetic or logical operations on these symbolic values so the assembler has to cope with that. All this makes your code easier to follow, or so the theory goes.

Finally you need all sorts of pretend or pseudo operations that the assembler will process into real operations to make the writing of the code easier. So you see, an assembler can start off simple and get quite complex, the trick is knowing where to stop.

I have to balance my desire for simplicity with useful features and as much compatibility with existing source code as possible. The only shortcomings on this assembler are that it has no macro facility nor can it use include files. This would have made the code a bit too complex and anyway I believe these concepts are made redundant by modern day cut and paste graphical based text editors.

With a desktop environment this assembler is easy to use, simply double-click !ASM84 and it appears on the iconbar. Open up the assembler control panel by clicking on the iconbar and drag a textfile into it. There are three lines giving filenames for the input or source file – the name to be used for the listing and the name to be used for the object file or machine code.

These can be changed by typing in the box and pressing return but you shouldn't need to. Just press the 'assemble' button to set it all going. The errors box tells you if the assembly was successful or not. With no errors an object file is written, otherwise only the listing file is produced. Note here that if these files already exist they will be overwritten with new ones. This means you can work with the minimum of mouse dragging, for example, once you have dragged your source file into the assembler, there is no need to do it again, just save a new version of the source and click on assemble.

The listing file is the result of the assembler for humans, whereas the object file is the result for the blower. Reading the listing file you get not only your original source code but also the address and instruction bytes that each line translates to. There is also a graphical map of memory usage, X denotes used memory and a dot represents free memory.

Then there is a list of all the labels and constants defined plus their values, and finally a list of errors along with their line numbers. I know line numbers are not used in the program but some editors allow you to go to line numbers to pinpoint the offending line.

Errors are also flagged in the body of the code surrounded by stars. Like all computers, you don't always get the error message on an incorrect line, but where the computer finally became confused. Remember that, and you're half way to tracking it down.

The syntax I decided to use, is based on my use of assemblers for many years and, as such, is probably not completely compatible with assemblers on other platforms, but I like it. The rules are simple. If the first character in any line is not a space then it is the start of a label definition. I am used to ending a label definition with a colon but some assemblers don't do this, either method can be used here.

If you don't use a colon, one is added for you in the listing file. When the line starts with at least

File Address	Bank 0	Bank 1	File Address
00h	Indirect Reg.	Indirect Reg.	80h
01h	TMR0	OPTION	81h
02h	PCL	PCL	82h
03h	STATUS	STATUS	83h
04h	FSR	FSR	84h
05h	PORT A	TRIS A	85h
06h	PORT B	TRIS B	86h
07h	Not Implemented	Not Implemented	87h
08h	EEDATA	EECON1	88h
09h	EEADR	EECON2	89h
0Ah	PCLATH	PCLATH	8Ah
0Bh	INTCON	INTCON	8Bh
0Ch–2Fh	36 General Purpose Registers	Mapped (access) in Bank 0	8Ch–AFh
30h–7Fh	Unimplemented Read as 0		B0h–FFh

one space then it should contain an op code or pseudo op code. An op code is an instruction from the processors instruction set, whereas a pseudo op code is some instruction to the assembler. For example, ORG is pseudo op code and is short for 'organisation' and tells the assembler at what address to put the assembled code.

Note here when specifying op codes case is not important, but it is when specifying labels and constants. Finally, all files must end with an END pseudo op code. There is a full description of the syntax and pseudo op codes in the help file inside the assembler. A point to note is that, unlike some assemblers, there is no default destination for an instruction – you must always specify w or f.

I have not said much so far about instructions. A full summary can be obtained from the 16C84 data sheet. Unfortunately, at 700K, this is too large to put on the cover disc but it can be downloaded from the Net at http://www.microchip2.com/ It is in PDF format so you will need an Acorn PDF reader. There is a public domain one by Leo Smiers and Derek Noonburg also available on the Net. For those of you not on the Net, I have put together a disc containing these two files along with other application notes (see the box for details).

There are also several books available about the PIC series of controllers and the 18C84 in particular, these are available from Maplin and other good technical book suppliers.

The data sheet contains all you really need to know but, like most complex topics, it helps to have a model in your head before you start. If you are used to conventional processors like the 6502 used in the early Acorn machines or the ARM chip used in the modern ones, the architecture of the 16C84 might seem a little strange. This is due to the blurring of the distinction between registers and memory.

There is only one internal register called the accumulator or W – don't ask me why that letter. All the other locations are called register files or simply files for short and are represented by F – I can work that one out.

Most operations use a register file to obtain the data to work on and you have the option of the result going either back into the register file or into the accumulator W. For example, INCF 20,f will take the register number 20, add one to it and store it back in register 20. Whereas INCF 20,w will place the result in the W accumulator and leave register 20 unchanged.

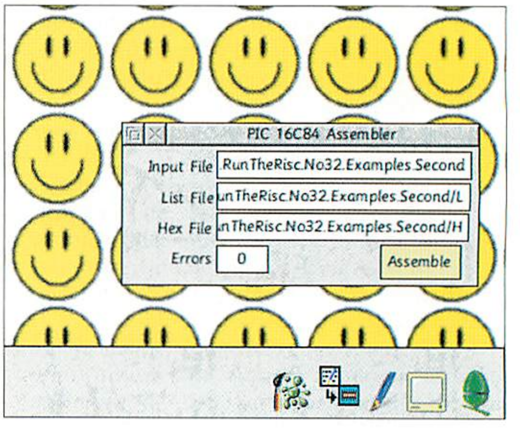
So far so good. However, some registers have a special function while others are general purpose. An example of one of the 15 special function registers is register 6, this is the B input/output port. Store anything here and it appears on the output pins. Read anything from here and it reads the value on the input pins. In that way registers act like memory on conventional processors.

However, another special register, register file 0, behaves differently. Whenever register 0 is used you actually access the register whose number is stored in register 4, this is known as indirect addressing. Other special registers contain arrays of bits for controlling interrupts, timers and data memory.

The registers are arranged in four banks of 128 registers per bank. Before you get too excited, not all the possible register numbers correspond to implemented storage space. Only the first two banks are used and not all the spaces in the banks are utilised, and even then some registers can be accessed from both banks. (See table for more details.) If you are not familiar with the instruction set, then some of the names in this table might not make much sense but they are all explained in the data sheet.

The banks are switched by bits in register 3, in effect it is only bit 5 that is used as the other banks are not implemented. It is often convenient to add this bank bit to the register number when talking about a register. For example, register 6 bank 0 is port B where as register 6 bank 1 is the data direction register for port B. This is often referred to as register &86 although you can't use a register number that big in an instruction.

All the registers are volatile. That is they lose their contents when the power is removed, however there are 64 bytes of permanent data in this chip. This is implemented as EEPROM (Electrically Erasable Programmable Read Only Memory), and is controlled by the registers whose names start with EE. The data can be stored by the running program or set up when the chip is blown.



You can use the assembler to generate bytes in memory location &2100 to &213F and these will be stored in the data memory. Reading the data memory is easy, just put the address you want to access in EEADR, that's register 9, and the data appears as the contents of EEDATA or register 8.

Writing is more complex and involves toggling some bits in the control register EECON1. Because this is EEPROM, it takes a long time to write data, a whole 10mS. Therefore, the processor can be made to generate an interrupt when it has finished its write cycle. There are other sources of interrupt, like an internal counter timer in TMR0 or register file 1 and some ways of making an external signal generate an interrupt.

In fact I could fill an entire issue describing the architecture of the processor but it is quite easy to learn if you have the data sheet. As the processor is reprogrammable, you can afford to experiment again and again.

At the beginning mistakes are often to do with your concept of what the instructions actually do – it is useful therefore to have a simulator. This is like having a processor running but with the lid off so you can see and manipulate all the values in all the registers. So that's what I will do next month, see you then. AU

Data sheet

A high density disc containing the data sheet for the 16C84 chip along with a PDF reader and several other PIC related files can be obtained for £3 inc VAT and p&p from: Musbury Consultants, 5 Helmshore Rd, Haslingden, Lancs, BB4 4BG

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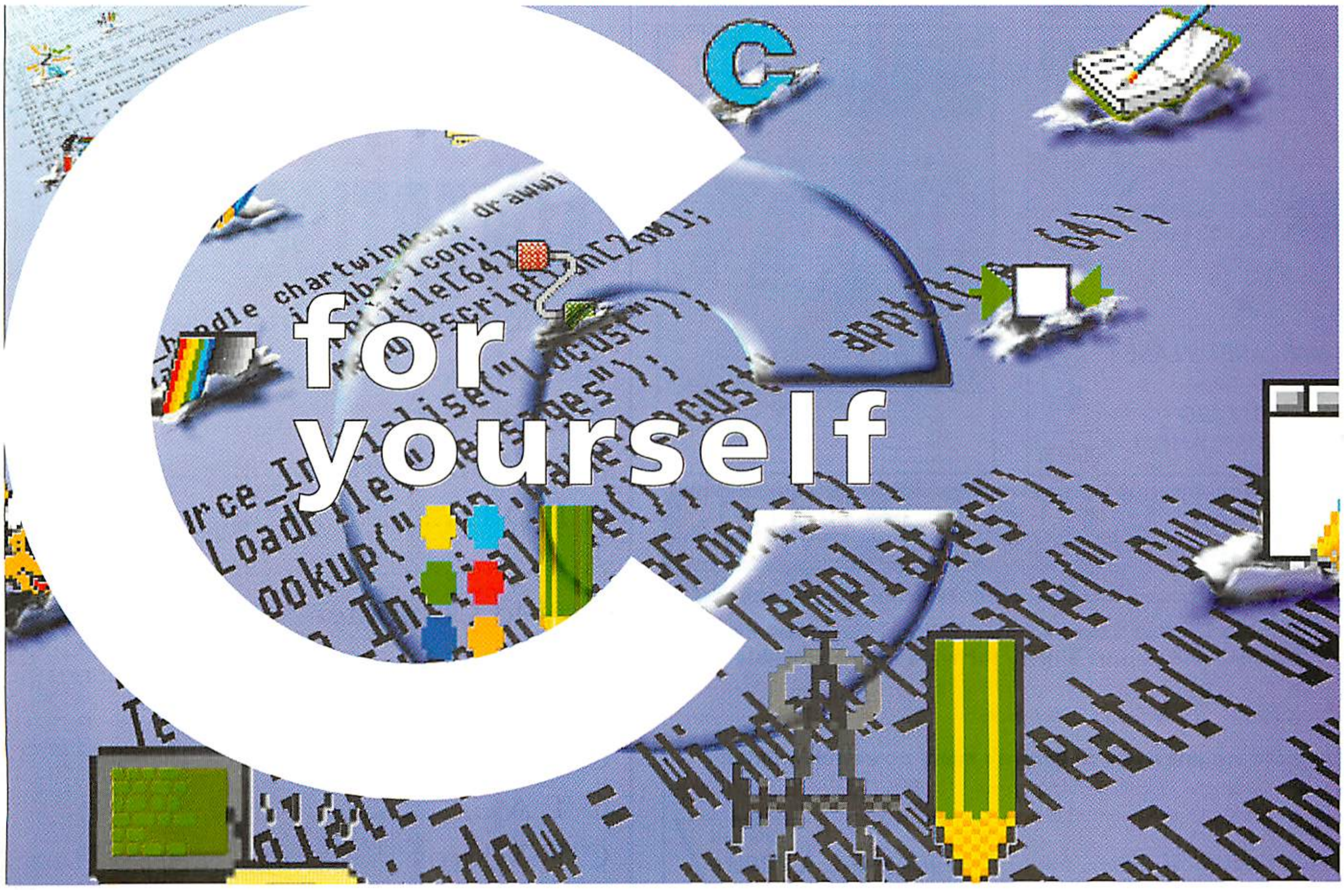
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C for yourself



JACK KREINDLER

Steve Mumford paints his screen with fonts

Last month I concluded by explaining how to use the ColourTrans module to prepare an anti-aliased palette ready for use in painting characters in a chosen font to the screen. To select a font for use, it's a simple matter of calling the Font_SetFont SWI with R0 set to the font handle that was returned to you when you first lodged a request:

```
int font_handle; /* Set up beforehand /*
_kernel_swi_regs in, out;
in.r[0] = font_handle;
_kernel_swi(Font_SetFont, &in, &out);
```

Once that's been done, the Font_Paint SWI performs the act of printing to the screen – R1 should point to the address of a character array holding the text to be printed, R3 and R4 should contain the starting x and y co-ordinates respectively and R2 holds some flags which set, among other things, whether the start co-ordinates should be interpreted as OS units or millipoints.

For our purposes, OS units are fine so bit 4 of R2 is set. That's all we need to do for this simple case – calling Font_Paint will then plot the string to the screen:

```
_kernel_swi_regs in, out;
char sample_text[] = "Hello World!";
int font_flags = 1u << 4; /* set bit 4 */
int x_coor, y_coor;
in.r[1] = (int) sample_text;
in.r[2] = font_flags;
in.r[3] = (int) x_coor;
in.r[4] = (int) y_coor;
_kernel_swi(Font_Paint, &in, &out);
```

Once the font is no longer required – whether that's because the program is being shut down, the user has requested a change of font or the mode has been changed – it's important to inform RISC OS so that the font's information can be cleared from the font cache. It's a simple matter of calling Font_LoseFont with the appropriate font handle:

```
_kernel_swi_regs in, out;
in.r[0] = font_handle;
_kernel_swi(Font_LoseFont, &in, &out);
```

And that's it. However, there are a couple of other things you should bear in mind when printing fonts in the WIMP environment. Firstly, although one particular font might be chosen at the start of the program, there's no guarantee that the same font will still be selected by the time the WIMP returns control so it's important to take this into account.

Using the arguments given above, it would be necessary to re-select the appropriate font at the start of each redraw loop. It's also possible to change font handle and colour, among other things, by including sequences of control codes directly in the text to be printed – more of which later.

Mode changes also cause a problem – if you think back to last month, you'll remember that the process of generating a font handle requires values for the x and y resolutions of the font. Although we were happy to accept the default values, these defaults aren't the same in different screen modes – if the font is requested in a high-resolution mode and subsequently the resolution of the mode is lowered, the font will appear bigger on screen and will distort and stretch. The simplest solution is to listen out for the WIMP mode change messages, and throw the old font away before requesting a new copy.

The basic calls outlined above are suitable for plotting short strings to the screen, but attempting to write something more demanding – such as a text editor or label printer – with these functions alone would prove tricky. Dealing with line breaks or wrap around requires a method of scanning the string before it's printed to determine its size on screen.

Thankfully, the font manager is capable of a lot more, providing the Font_ScanString and Font_StringBBox SWI calls to perform the above checks – the former can chop a long string into shorter divisions, providing you with information on where to split the string, or where to insert the caret after a mouse click on a text area.

Other useful functions include SWI calls to build a list of fonts available to the user and create a menu from that information, and conversion utilities that allow you to swap between values in millipoints and OS units – certain calls require co-ordinates in one or the other of these units, so a method of converting between them is handy. I'll provide details of these next month, so I hope to see you then. AU

ACORN USER ADVERTISERS INDEX



EasyPage demo

We've recently had a few enquiries about why the demo copy of *EasyPage* on the August *Acorn User* cover disc doesn't work.

I didn't notice it at first because we've got RISC OS 3.7 so all the Acorn toolbox modules are in ROM, but the !Run and !Boot files have been removed from the !System directory supplied with *!EasyPage*.

This means that double-clicking on this !System directory, or the filer seeing it as the first !System it comes across doesn't change System$Path, and so !EasyPage fails to work. Not having a !Run file appears to stop !SysMerge or some versions of it (I think the one built into Configure on RISC OS 3.5 is affected) merging this directory with another one.

I assume that the !Run, !Boot and !Help files were removed from the !System directory when you were deleting things to make it fit on the disc because they were on the disc that we sent you.

By the way, there is also a small problem with loading some drawfiles into the demo version. This has never been present in the full version and must have crept in while I was cutting bits to make the demo!

David Porter
Porter's Software
http://www.ppsoft.demon.co.uk/

Space is always a consideration for the cover discs, as is the risk of upsetting a machine's existing system !Boot and !Run files. The simplest way to update the !System directory if automated systems fail is to just drag the new version into the directory window of the old one.

Cover comment

Further to David Glover's comment about the A5000 keyboard in the July issue, are we to believe that the A4000 is the *Ultimate Graphics Machine* as the cover of the August issue seems to indicate ?

Paul Dunning
pauld@ebert.demon.co.uk

Some people are just too clever. The Art Editor concerned would like to point out that art is more important (and attractive) than reality.

Year 2000

I am writing to comment on your news feature in the September 1997 issue titled *Year 2000 problem? What problem?* which points out that the RISC OS date counter won't expire until 2248. This is all well and good, but it may not necessarily be the end of the problem.

You also have to look at how software handles the date. For example, if the OS returns '1997' as the year, how do we know that the software carries this though? Other platforms deal with only the last two digits and assumes the '19' part. So, '1997' becomes '97'. The year '2001' will then be incorrectly interpreted as '1901'. Do all Acorn based software packages deal with dates correctly, or do some employ this rather unsafe method of date handling?

This problem is not confined to hardware or operating systems – database and spreadsheets may be set up to deal with years in two digits. This may have seemed like timesaving when the system was set up, but it can be fatal to your business if mission critical data is stored in this way.

Any package which uses dates should be checked and tested, preferably now on backups of existing data. I have faith that Acorn products are robust and will not even show a glimmer of pain as the clock switches over to 1/1/2000. However, it is better to be safe than sorry.

I urge anyone who uses their Acorn machines for business to check them thoroughly for Year 2000 compliance before it is too late, especially when many will have x86 cards running Windoze applications too, which are probably going to be the root cause of any problem. I would also suggest that any transfer of time-based data from one system to another is halted until it is known to be safe. Correct data that is fed into a system that deals with dates incorrectly will be scrambled, and will be a problem to fix – if at all.

This is not meant to scare people or cause an argument – merely to stop the wave of





complacency that surrounds the *if the OS is OK, then everything else is OK* philosophy. When you've checked your system, then you can sit back and watch the PC boys squirm, but not before.

Paul Dunning
pauld@ebert.demon.co.uk

While what you say is quite true – it is how the software handles the date that is important – it is also true that while most RISC OS programmers try hard to keep their applications as small as possible, this kind of skimping does not occur, simply because it actually means writing more code to cut out the extra digits.

I'll even pay £50 to the first person who can prove that a (reasonably significant) RISC OS application or utility written before January 1996 stores dates as two digits and fails in the year 2000 – I'll be surprised if there are any.

Alexander info part 3

On page 81 of issue 184 of *Acorn User* I read a reply from Sam Cave to your cry for help in issue 182 to assist Gary Hughes in the Republic of Nauru in tracing a software package called *Alexander*.

I noticed that the phone and fax number quoted by Sam happen to be incorrect – numbers were updated to 10-digit numbers in October 1995 (including the zero at the start of the area code)

The present phone number is therefore +053 4874444 and address is Internationaal Instituut ITC, Boulevard 1945 nr. 350, 7511AL Enschede, The Netherlands. I called the firm today but unfortunately there was no one present who could answer my question whether the package Alexander is still available. The firm is an institute for training people for air mapping.

Willem Schuyf
schuyfw@pi.net

A kingdom divided

I'd like to mention how great it is that Acorn are a united force fighting together. I recently discovered just how divided the PC world is with Microsoft vs other companies and the constant criticisms made of Bill Gates.

Should a vacuum open, Acorn must move fast to fill it. I have been doing a little research into the enemy camp and one interesting fact that I uncovered is that the Intel Pentium Processor II has a floating point error. Ha ha! Intel refuse to recall the processor, claiming that it is but a *minor error*. It's not the first time either.

Bill Gates has been in the spotlight, criticised for 'literally betting his company on the Net, bending his production lines, from development tools to desktop applications, into Net-oriented shapes.' The latest version of PC windows is looked on, by many, without much optimism.

There has been little work on 'crash resistance' and Windows 95 is universally acknowledged to be filled with bugs. As an Acorn dealer said, Windows 3.1 had its problems, with Windows 95 they multiplied!

Some PC users predict that if Microsoft's little gamble doesn't pay off, they may well be history. I make no apologies for launching another thunderbolt in the familiar direction of Acorn's advertising schemes, such as they are. The PC world is simply filled with these flaws and gaps where those in control seem to be losing their grip. Acorn should seize the opportunities that arise and reveal to everyone that the market is about to change for the better.

William Simpson
hughesj@argonet.co.uk

A new direction

I stopped using my A3000 some time ago. I note another reader is thinking of doing the same with his Risc PC. The difference between us? I think Acorn are fantastic. They are the technology innovators with fascinating, intriguing, and sometimes mind-blowing developments.

As a regular reader of *Acorn User*, I am totally addicted to touring the ARM, Acorn and Acorn CyberVillage Net sites.

The latest Acorn, under the guise of the Psion 5 is beautiful. Carefully and clearly thought out – at last a really potent pocket computer. I went into Dixons to look at one but they'd sold out. I predict they will sell in their millions and resurrect the type of *Acorn User* we used to know.

Perhaps you should now concentrate more on 'Acorn Inside' technology – even have an incorporated 'Psion User'. I'm sure then that the letters pages would be brimming with confidence and enthusiasm. A bit like the old days!

David Jewson
David@djworld.demon.co.uk

It's a nice thought but the Psion 5 is hardly an Acorn machine, it may use an ARM processor but the operating system is not RISC OS or any version of it.

Association of Acorn User groups update

Following the launch article in the August issue, we have slightly changed the URL of our Web site to: http://www.argonet.co.uk/scs/AAUG/

I've also been contacted by a group of people who are interested in setting up a Manchester Acorn user group. If you live in

the Manchester area and would like to join contact Tommy Lowe on 0161-707 2927 or e-mail Thomas.Lowe@btinternet.com

If you would like to set up an Acorn user group in your area and you know several people who think likewise, get in touch as we may be able to help you.

We are still looking for companies and developers who wish to participate in the global discount scheme for all user groups who are members of the association. If you would like to offer a discount, or are prepared to visit club meetings to demonstrate your products, then please contact me to add yourselves to our directory.

My new contact details are: Association of Acorn User group, c/o Neil Spellings, 82b Bovill Road, Forest Hill, London, SE23 1EJ. Tel. 0468 051762. E-mail: neil.spellings@argonet.co.uk

The 'design a logo' competition is still open – details of which can be found in the August issue of *Acorn User*. There will be a full update with another full listing of user groups and forthcoming events and meeting topics in the November issue.

Neil Spellings
Chairman, Association of Acorn User groups

First love

In the dark days of the advent of the A3000 computer, Co. Durham Education Authority thought it would be a wonderful idea if all music departments in the county were to receive an A3000 and EMR's *Studio 24+* music software. Yes, IT literate music staff bitched about not being offered Atari machines, but we gradually grew to love this quirky but versatile combination.

All was well with the world until that fateful day when our supposedly RISC OS 3 compatible music program was transferred to an updated RISC OS 3 machine and adamantly refused to play the badly harmonised Year 10 attempt at the 'Passion Chorale', and 'Axel F' was no longer available to amuse the Year 7 pupils while I packed away the music-stands from the lunch time rehearsal.

My computer is busily engaged in a love affair with *Sibelius* but my heart (and 146 unplayable files) still hankers for that unobtainable first love. Can anyone out there help me to recapture those heady days of my youth (and the coursework that had to eventually be recorded on antique non-digital sound equipment)?

Lastly, my department has inherited a mixture of A3000s and 3020s from the IT department. All have been fitted with internal hard-drives but, short-sightedly in my opinion, without MIDI interfaces. How can I kit them out, with MIDI (as cheaply as possible) without ditching the existing internal hard discs?

Martin McCollom, Head of Music
St John's RC Comp
Bishop Auckland, Co Durham

Keep your eyes on our regular Audio page, the solution to your MIDI problem is up and coming.

Money makes the world go round

I would like to ask if any reader of *Acorn User* or any one who has complained about Acorn's lack of advertising would like to put their money where there mouths are and help support a national advertising campaign via the media.

This, in my opinion, would not only benefit Acorn but also the users of the computers – if the advertising was successful, more Acorn hardware and software would be sold which would increase the development process. This would also show the world that Acorn's supporters are willing to back Acorn in any way they can – anyone scared yet?

Ronald Paul Smythe
r.smythe@nescot.surrey.sch.uk

In my opinion...

I have some remarks after reading the August 1997 issue. While most these concerns aren't directly related to *Acorn User* itself I found it appropriate to address them.

• Page 5 – the infotainment push article. It appears that Acorn are spreading rumours even though their NetStation isn't widely available yet. It looks that the Acorn NC will be obsolete before it even arrives.

• Acorn's name change...again – it seems that Acorn are more concerned about a flashy name than flashy products. *Replay3* (seen at AW 96) is still not available (while Mac and PC users have been able to multitask videostreams for over two years now). NCs are still in 'early edition' stage – without most of the items as described on Acorn's Web site. The 200MIPs cheap replacement for the A7000 as told at AW96 probably only exists in Mr Bondar's imagination since nothing has been heard of it after the show.

The list could go on..

• Page 19 – Congratulations, an honest review of the PC card's shortcomings.

• Page 26 – The *TopModel 2* article. Nice but it still (in traditional magazine style) doesn't frankly gives me the necessary advice whether to upgrade my existing *Topmodel I* or let new users buy TM2. Is the £130 with or without VAT? *(ex VAT – Ed)*

• Page 39 – The *WinRisc* review. Yet another article that explained the truth behind an over-hyped product that most buyers kindly ignore in their disc boxes. It again shows that the usually mild Acorn users can show their teeth.

• Page 53 – Game show. Apparently somebody has read my posting a while ago where I wrote that it would be a good idea to convert older games to the Acorn platform. By re-working older ZX Spectrum or C64 games where a lot of these games had great playability but fewer graphics or less sound appeal, it could be possible to increase game productivity in general.

Of course that was before I heard about several popular 8-bit computer emulation and the MAME (multi arcade emulator). It stuck me when I read the article about *Deadline* and saw the accompanying pictures that this games looks very similar (even in appearance) to an old arcade hit called *Commando*. Perhaps it might be a good idea to see how this Acorn 'original' compares to the MAME/Commando combination – especially since the last one is nearly free.

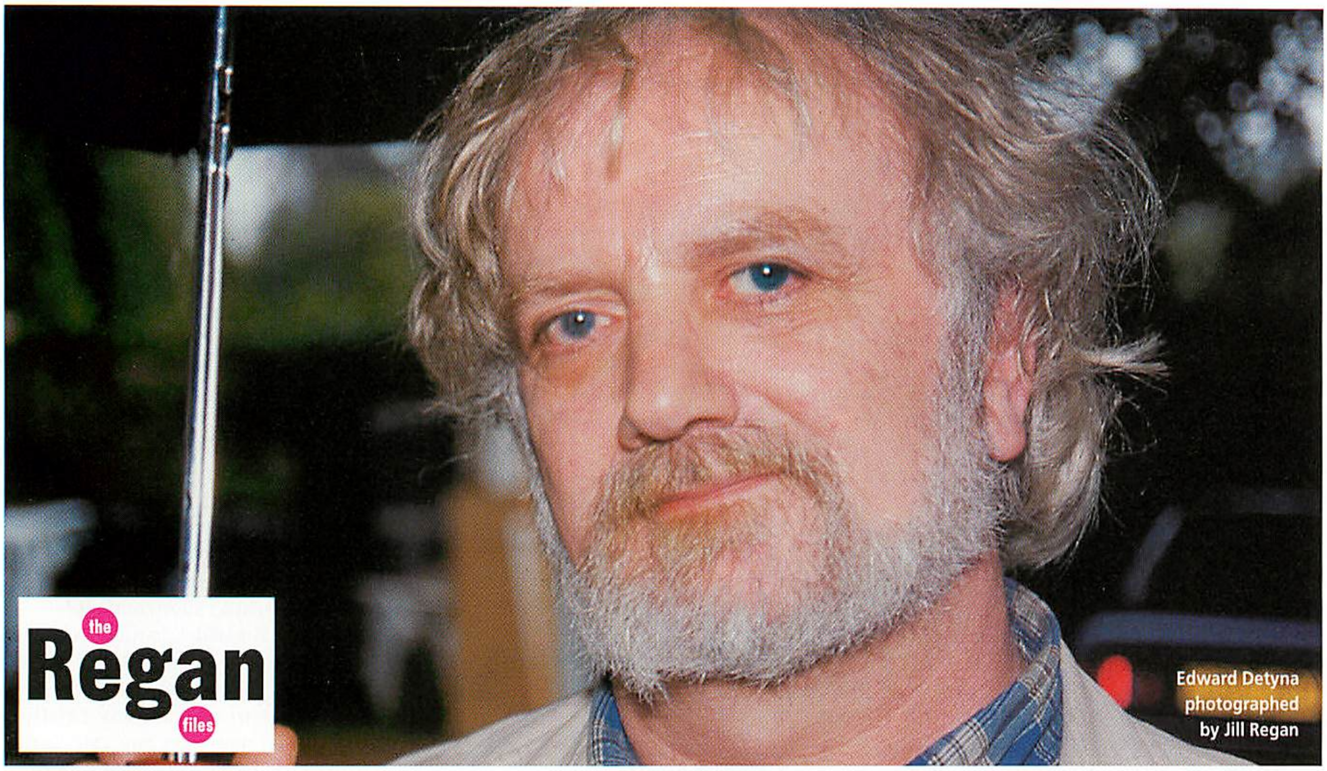
Anyway, I must say that generally the articles are improving especially the (p-)reviews.

Manuel Timmers
starcorp@innet.be

Food for thought certainly, although MAME is not much use to anyone without a StrongARM.

Arachnid software

Following last month's article you will find Web links to the programs reviewed on the *Acorn User* Web site at http://www.idg.co.uk/acornuser/



Edward Detyna photographed by Jill Regan

Buying software can be likened to eating out. Many people will always choose the multi-national fast food chains which offer the same inoffensive, homogenised tat wherever you go. It's nice to think of Acorn companies as good local restaurants.

One company in this category is the Electronic Font Foundry, which is run by Edward Detyna. Edward understands the concepts and the necessity of good design, so much so that he has produced a CD of inferior fonts which he gives away. He sees this as the best way of proving his point.

'Fonts are not like any other software', muses Edward in a heavy Polish accent. 'You have to produce large numbers of them and they do not have any protection from being illegally pirated. Any other software company would produce two or three applications and quite reasonable protection. Not so with fonts.

'All you have to do is get hold of some cheap fonts – which is easy, just walk into any computer store – convert them if they are not already for the Acorn platform and change their name, and you then have a product. Usually a cheap, badly-designed one which you can sell for at least 40 pounds.

'It is very annoying but there is not much to be done about it. My only way of fighting back was to produce such a CD and give it away, saying that you can produce thousands of fonts much more easily than one well-made font. That is why I can afford to give it away. I can then charge a reasonable amount for a font that has been carefully designed, and hopefully point out to the public that they should only pay for good fonts.'

Font design is a craft – an example of a well-designed font is the one used by the London Underground which was designed by Johnston: 'The mistake people make when designing letters separately is that although each looks beautiful on its own, the text they create may not look good because they do not fit together. A font is a collection of letters plus a global structure imposed on them which tells how they relate to each other. It takes time to create.'

Edward designs fonts on Acorn machines using programs he wrote himself. Originally from Poland, Edward came to England in 1968.

'In Poland from time to time we had upheaval and a lot of people would try to get away. It was the time of the students' revolution; I managed to get away but several of my friends were arrested. I was doing a PhD in Thermonuclear Physics at Warsaw University but did not want to take any documents with me just in case I was stopped at the border.

> **'Any other software company would produce two or three applications and quite reasonable protection. Not so with fonts'**

'As it happens it would not have mattered because I left on the day Czechoslovakia was invaded. At the time there was a huge number of western tourists in Prague and they were just pushed through the borders into Poland then had to leave Poland. So I was not searched at all.'

Edward arrived in England with no evidence of the degree he was doing – he had no way of getting a reference because his supervisor was in jail. Nevertheless, he did get a PhD grant, got a PhD and worked for 10 years at London and Reading universities before deciding to leave university life. Discovering his skills were not very saleable, he got into typography 'by accident'.

'In 82/83 there was great excitement about interactive video and I started working on touch-screens. I was using a BBC with Teletext and it occurred to me that it was necessary to have reasonable fonts to show on the screens. It seemed impossible at first but in the end I produced semi-scalable fonts. I was the first to do it.'

Edward has produced a new font system that he hopes will push computers into the 21st Century. Since Acorn computers are his first choice, he has been trying to persuade Acorn to implement it.

'Ten years ago each computer and each application had its own fonts; then it progressed so that the fonts were sitting deep down in the operating system and any application could use them. But other languages with their own alphabets still causes problems. If you want to write in Arabic, you have to have an Arabic wordprocessor with special Arabic fonts. The same happens if you want Indian or Hebrew languages, and you cannot mix them.'

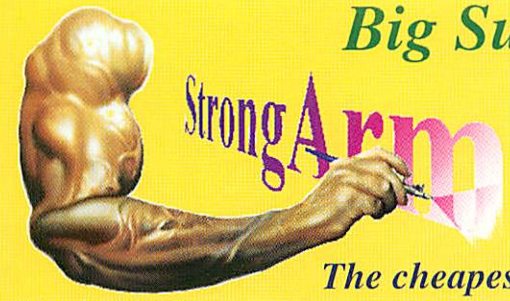
'But all this is not needed; it can be done with intelligent fonts. This type of font actually has information embedded in them on how to use them. I see the Acorn being an ideal machine for these because existing applications could be used and it could become a multi-lingual machine.'

So, not just one local restaurant then, but the whole range from Greek to Thai. Give me that over Burger King any day.

Jill Regan

Big Summer Price Reductions

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RiscPCs



Picture by Walter Briggs using Studio24Pro

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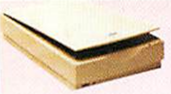
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Flatbed Colour Scanners

There are now a growing number of scanners which will work on RiscOS. Most of these need a SCSI interface though, so the Epson GT5000 parallel is still our most popular model.
A new inexpensive parallel port scanner which works just on the PCcard is now available at £169.00 !!
All our scanner prices include Twain and Imagemaster software. SCSI scanner prices do not include the SCSI connecting cable.

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Hard Drives

Pineapples removable drive system is available for both IDE and SCSI systems. Provides total data protection!

IDE mounting kit (inc cable)	£15.00
IDE removable case	£10.00
SCSI mounting kit (inc cable)	£19.00
SCSI removable case	£10.00

Bare IDE harddrives

1.2Gb IDE	£145.00
1.7Gb IDE	£158.00
2.0Gb IDE	★ £169.00
2.5Gb IDE	★ £179.00
3.2Gb IDE	★ £209.00
3.8Gb IDE	★ £249.00
4.3Gb IDE (Fireball ST)	★ £319.00
4.3Gb IDE (Cyclone 5.25")	£239.00
5.1Gb IDE	£349.00
6.4Gb IDE (Fireball ST)	★ £399.00

IDE Expansion

x4 IDE Expansion card	£69.00

Bare SCSI harddrives

1.0Gb SCSI	£169.00
2.0Gb SCSI	★ £329.00
3.2Gb SCSI (Quantum ST)	★ £289.00
4.2Gb SCSI	★ £459.00

Studio24Pro

'Many Acorn User front covers have been created from scratch using this program alone, concrete proof of the power of this creative tool'- *Acorn User Mar96*

Now just ★ £99.00 ★

Users note FREE update v2.16 is now available.



PAL TV Coders

We have a range of PAL TV coders available which allow the output of any Acorn Computer to be displayed on a normal TV or recorded onto a video recorder. All models have S-VHS as well as standard video outputs. Please ask for more details.

PLC/3 PAL Coder	★ £79.00
AVK/3 PAL Coder	£289.00
AVK/5 PAL Coder	£379.00
Monitor adapter 9-15pin	£4.11
Monitor adapter 15-9 pin	£4.11

Pineapples Virus Protection Scheme has been running for over five years and is still being updated with new viruses on a regular basis. New software versions are sent out to members every three months and the total number of viruses which can be removed is over 100.



Joining fee just £28.20

Inexpensive multi-user licences

'If you're interested in virus protection, join the Pineapple virus protection scheme and buy Killer. Accept no alternative - 'Acorn User Feb 96

As an Acorn Centre of Technology Pineapple Software can help you with ALL your Acorn computer related problems.



Colour Printers

Canon BJ30 - portable mono	£159.00
Canon BJC70 - portable col	£199.00
Canon BJC240 - promo pack	£169.00
Canon BJC620 - colour	£289.00
Canon BJC4200 - promo pack	£209.00
Canon BJC4550 (A3)	£364.00
Canon BJC5500 (A2)	£698.00
Epson Stylus 200 mono	£139.00
Epson Stylus 200 colour	£179.00
Epson Stylus Colour 400	£219.00
Epson Stylus Colour 600	£279.00
Epson Stylus Colour 800	£399.00
Epson Stylus Colour 1520 (A3)	£729.00
HP Deskjet 690C	£259.00
HP Deskjet 870C	£369.00
HP Laserjet 6L	£399.00

Other Items

Artworks video tutorial	★ £14.99
Casio QV10a Digital Camera	£376.00
Casio QV100 Digital Camera	£528.00
Sibelius 6 software	£180.95
Sibelius 7 Student	£493.50
Sibelius 7 software	£940.00
Studio24 version 1	£35.00
Acorn Netstation (Ethernet)	£467.00
Acorn Netstation (Modem)	£467.00

We have many items in stock which are not shown in this advert. Please ask for anything you require which may not be shown. We also undertake repairs and upgrades to all Acorn computer models. Collection can be arranged if necessary.

Pineapple Software

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email:- sales@pineaple.demon.co.uk

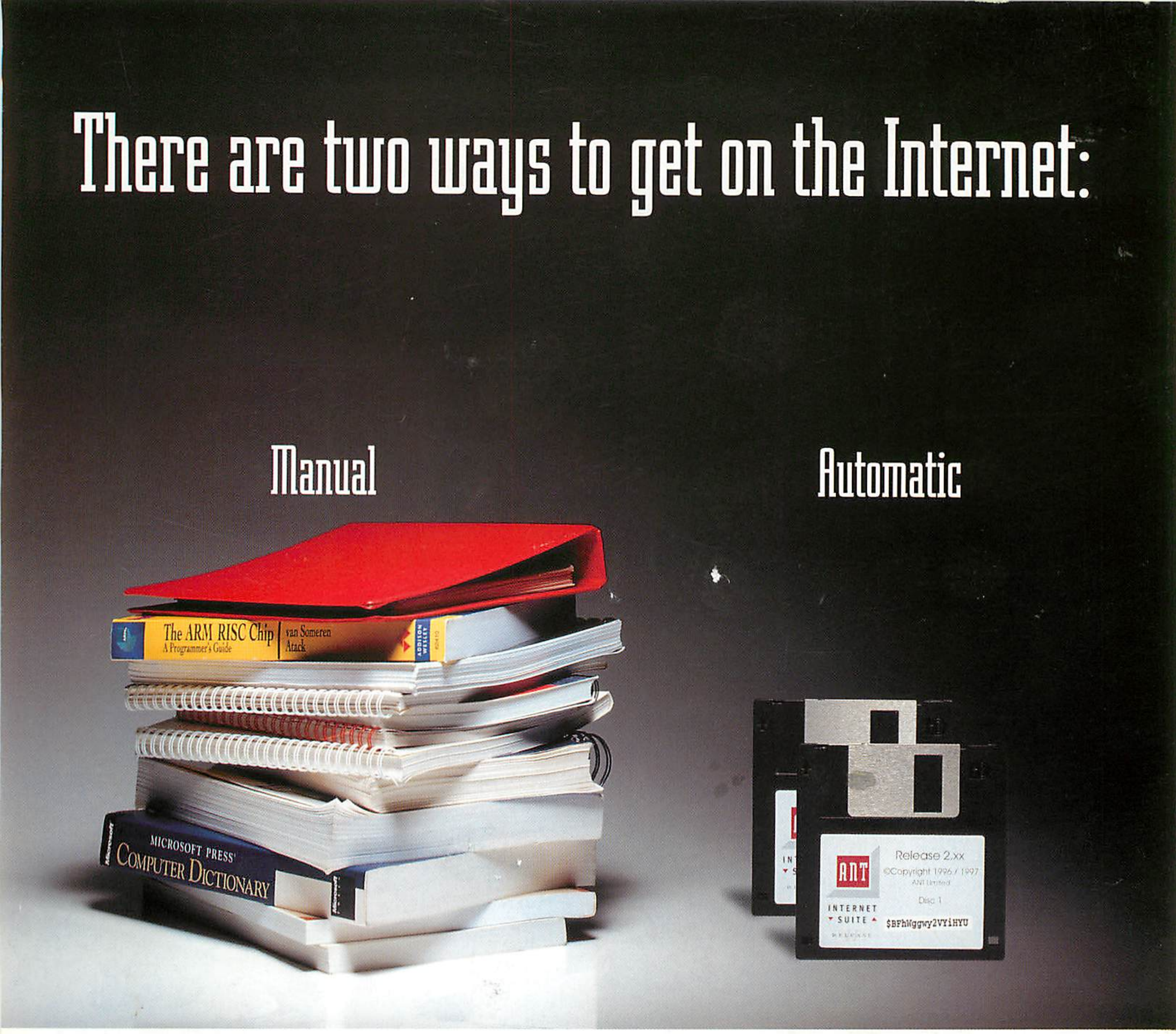
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Terms:- All prices *include* 17.5% vat. Carriage £15 on computer systems. £5 on all other hardware. Other items free. Phone for quote outside UK. Official orders, cheques and all major credit cards accepted at no extra charge.

'Pineapple offer some of the finest and friendliest after sales support you will find' - Acorn User Mar 96

Why not come and visit us (easy parking) where you can see most of the Acorn range of computers and other hardware in action. Monday - Saturday 0900 - 1730

CENTRES OF TECHNOLOGY Acorn CENTRES OF TECHNOLOGY



TCP/IP, PPP, SLIP, SMTP, POP2, POP3, IMAP, MIME, UUencode, FTP, HTTP, HTML 3.2, NNTP, GIF, JPEG, Telnet, Gopher and more.

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When you use the ANT Internet Suite Release II, you don't need to worry about all the technical jargon. Our software takes care of setup and configuration. All that most users need do is put our disc in the floppy drive, type in name and serial number, and choose their Internet provider and access point from pop up lists.

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